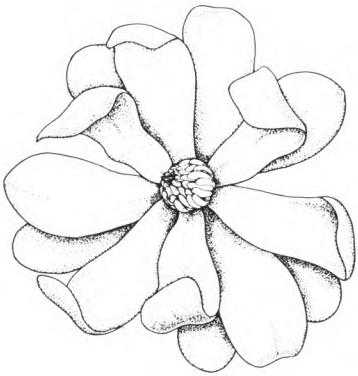

UNIVERSITY OF NEBRASKA,

# BOTANICAL SURVEY OF NEBRASKA.

Conducted by the Botanical Seminar.

# I.

# Preliminary:
# The Plan and Scope of the Survey.



LINCOLN, NEBRASKA,
1892.
Published by the Seminar.

# BOTANICAL SURVEY OF NEBRASKA.

CONDUCTED BY THE

**Botanical Seminar of the University.**

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## PRELIMINARY: THE PLAN AND SCOPE OF THE SURVEY.

The object of this, the first publication of the Botanical Survey of Nebraska, is introductory only. It is intended to serve as a preface and introduction to the future publications of the Survey.

Although the general plan of the Survey was agreed upon in June of this year, and no little collecting done in accordance with it in July and August, the Survey was not formally organized till August 24. At that time the organization set forth on the preceding page was effected. As there indicated, the Survey will be entirely under the control of the Seminar. The Seminar selects the members and assigns the work, and its members will bear the entire expense of the Survey. But in the conduct of it they will be advised and assisted by the gentlemen who have kindly consented to act as the advisory committee, and in botanical and scientific matters they will rely largely on the advice and assistance of Dr. Bessey.

In entering upon the Survey, the Seminar is fully aware of the difficulties which must necessarily beset such an undertaking when conducted by private means and enterprise. But if there are difficulties attending the conduct of the Survey by private enterprise, there are also undoubted advantages. The members need never fear to do purely scientific work, they need not spend their time in strengthening their official rather than their scientific position, and they need not be distracted from more important matters by the burden of continually demonstrating to doubting Thomases the practical nature of their undertaking.

No apology for the undertaking of such a survey is needed. The changes which are taking place in the flora of the state have already been noted by Mr. Webber in the preface to his catalogue. The rapid settlement of the western portions of the state is undoubtedly accelerating these changes, and requires that those regions be examined at once, while the native flora is intact. The

number of collectors and persons interested in botany in the state is increasing, and they demand that the local flora—for the determination of which, as regards the Anthophytes, two manuals are required in many parts of the state—be systematically set before them, and that the lower plants of the state be made accessible to them. At present, but a limited number can form any acquaintance with the larger part of the plant life of the state. Mr. Webber's catalogue and the supplements to it have been of very great assistance to botanists and collectors in Nebraska. But they are not enough, and, besides, are far from representing the whole flora of the state, as is shown by the additions made almost daily. To continue to add to Mr. Webber's catalogue in a haphazard way will needlessly and indefinitely postpone the complete presentation of our flora which is desirable. Systematic botanical exploration of the state will bring such a catalogue much sooner, make it a far better one, and cannot fail to develop many things of practical as well as scientific importance.

It would be greatly to the public interest to have a state Natural History Survey. But the time when such a survey can be conducted with public funds seems far distant. The next best thing is a private survey. This the Seminar has undertaken for the botanical part, believing that the time when such a survey should be had is at hand.

It is the intention of the Seminar to make a thorough and complete survey of the state, extending over several years and covering all forms of plant life. Those parts of the state which are less known will be carefully explored, and, as far as possible, complete collections will be made there. Distinct cases have been provided in the Herbarium of the University for the Survey Herbarium, and several collections of fair size and no little importance have been made already. The plan is to make the Survey Herbarium a complete representation of the flora of the state, to indicate there, as far as possible, the distribution of each species, to determine the floras of the various regions of the state, and to provide for the botanists of the state a herbarium for the study

of the local flora as well as complete and accurate lists and catalogues, and monographs of the more difficult groups. At the close of the Survey the Herbarium will be presented to the University. And during the progress of the Survey it will be accessible to all persons, prepared to use it, who wish to study the plants of Nebraska or any group of them.

In addition to the reports, catalogues of local floras and monographs of particular groups, principally of the lower plants, will be published. Several such monographs are now in preparation, and more are contemplated. These will make possible a more thorough acquaintance with the plant life of the state by the public generally, and, it is hoped, enable the public schools of the state to do much which at present they cannot do for lack of the numerous and expensive books which such work requires. But the Seminar will aim to make the work of the Survey scientific rather than popular.

While the Survey is essentially a private undertaking, conducted by a private organization and carried on with private means, the members of the Seminar recognize that their connection with the State University, most of them being graduate students at that institution, puts them under obligation to the public. They will endeavor, therefore, to give such practical direction to the Survey as will be consistent with a purely scientific aim. The grasses of the state, the trees and woody plants, injurious and beneficial fungi and their observed effects, and other matters of interest to Agriculturist and Horticulturist, will receive special notice. But the bulletins of the Agricultural Experiment Station are the place for the most of such work, especially the popular side of it. The Survey must often treat them on an equality with matters of little economic or purely scientific importance.

With no intention of being unduly radical, the Seminar will endeavor to have the publications of the Survey fully represent the most recent development of Botany in all directions. The Survey is intended for scientific purposes, and its publications for scientific eyes, primarily. Furthermore the Seminar cannot

assent to the doctrine that the public are too weak to stand a draught of modern scientific results, unless strongly diluted with ancient and untenable ideas, no longer held even by those who continue to put them off upon others.

UNIVERSITY OF NEBRASKA.

# BOTANICAL SURVEY OF NEBRASKA.

Conducted by the Botanical Seminar.

## II.

# Report on Collections Made in 1892.



LINCOLN, NEBRASKA, U. S. A.
Published by the Seminar.
1893.
(Distributed April 15, 1893.)

# CONTENTS.

# NOTE.

In this report, in addition to full lists of the two principal collections made during the past year, a list is given of all additions to the reported flora of Nebraska up to January 1st, 1893, as far as possible. A great deal of material remains to be examined, and many things which should appear in this report must be deferred for the reason that the publication has already been held back much longer than was intended.

The thanks of the Seminar are due to the gentlemen who have collected for the Survey in different parts of the state. Rev. J. M. Bates, of Valentine, collected many of the species from northwestern Nebraska. Dr. H. Hapeman, of Minden, collected the algæ reported from that place. Mr. D. A. Saunders, of the Botanical Department of the University, collected many of the species reported from Lancaster county, and determined most of the algæ. Messrs. W. H. Skinner and A. T. Bell, of the Crete High School, collected the *Erysipheæ* reported.

The members of the Seminar wish to remind collectors that no species can be reported unless a specimen is deposited in the herbarium of the Survey.

# I.

## Flora of the Sand Hill Region of Sheridan and Cherry Counties and List of Plants Collected on a Journey Through the Sand Hills in July and August, 1892, by Jared G. Smith and Roscoe Pound.

On July 6th we started from Alliance, and between the 6th and 8th we traversed on foot the sand hill region of Sheridan and Cherry counties, emerging at Johnstown in Brown county. From Johnstown we went to O'Neill, following, at no great distance, the Fremont, Elkhorn, & Missouri Valley railroad. We drove across country from O'Neill to Lincoln, arriving there August 6th.

The greater part of the collecting was done in the sand hills and in the lake region of Cherry county.

### GENERAL FEATURES OF THE REGION TRAVERSED.

The main group of the sand hills of western Nebraska extends from the 103d meridian, midway between the North Platte and the Niobrara, eastward to the 98th meridian. It extends southward to the 41st parallel, and has for its northern boundary the Niobrara. In passing into the sand hills from the old lake basin around Alliance there is a perceptible fall. One does not go up, but goes down; and there is a general slope towards the east, indicated by the fact that in the wet valleys the lake or pond is generally at the eastern end. We met with no exception.

The sand hills are a region free from drainage. The surface water, instead of flowing off in the river channels, collects in the valleys and forms countless lakes or ponds without outlet. The valleys are, as a rule, parallel, and have a general east and west trend. They are not strictly continuous, being separated by low ridges or groups of low hills. But the passage is always easy from one to the next, while getting over the side of the valley is difficult and sometimes well nigh impossible.

Between these more or less pa_allel valleys are ranges of hills of nearly pure sand, rising from one hundred to five or six hundred feet above the center of the valley. In some cases the valleys are bounded on north and south by high, steep hills; oftener the sides rise gradually through a succession of hills of increasing size. The hills bear all manner of fantastic shapes, showing their formation to be due to winds rather than to water. The upper slopes are abrupt and the ridge is narrow, and a characteristic mark is the great pits or craters *blown* out of their sides or tops. These "blow-outs" are usually on the southwest face of a hill, though there are many exceptions.

We came upon two streams. The North Loup rises in a marshy region in west-central Cherry county around Brush Lake. Where we first saw it, it was very cold and swift and about as deep as it was wide (2 to 3 ft.) It flows, constantly and rapidly increasing in size, through a valley bounded by high, steep sand hills. Sometimes the valley is broad and level, but as a rule it is narrow, and often a perfect gorge. The stream has a limestone bottom, and not far from its source has innumerable falls—some of them quite large. The Gordon is a clear stream, more sluggish than the other, but swift compared with streams in the eastern part of the state. It was quite wide and deep where we came upon it, and flowed through a wide, swampy valley, bounded by high sand hills.

In eastern Cherry county there is a region of permanent lakes, of which the largest, Dad's Lake, seemed to be about 5 to 6 miles long and 1 to $1\frac{3}{4}$ miles wide. Beyond this fine body of water there is a network of lakes, of which Pelican Lake is the largest. From a hill above this lake twenty-four are visible.

In Sheridan county and western Cherry county the valleys were, roughly speaking, of two kinds—wet valleys and dry valleys. In some seasons valleys are dry that are wet at other times, but some valleys appear to be permanently dry. They are usually quite long and the sides are provokingly steep and high. The wet valleys vary in length from 2 or 3 to 15 miles and are

somewhat narrow. Some of them are beautiful as seen from a hill-top, and some of the best are occupied by ranches. Between the valleys in the passes are often a large number of small ponds.

It is commonly said by stockmen and others interested in the region that the sand hills were entirely bare of vegetation at a comparatively recent date and have only commenced to be grassed over since the days of the Indian and the buffalo. This is doubtful. We have accounts of the sand hills written in the early part of this century which give the salient features of the landscape about as they appear to-day. Furthermore we have access to collections of plants gathered in the sand hills from 1839 to 1858, and these collections agree in species and type with those collected in more recent years. There seems to be neither increase nor diminution in the number of species. The region is one where physical conditions may vary greatly in a term of years. We were told by stockmen who had been in the hills a long time that the lakes sometimes disappear during periods of drouth, and that one year a crop of hay may be cut where, the year before, there was a fine body of water. We saw one case in point. In one valley the bottom for a long distance was white with the dried remains of a species of *Chara*. But two or three insignificant ponds remained, and they were full of the living plant. If one sees the sand hill region for the first time when bare of vegetation in winter or early spring or after the drying out of July and August, he may easily get the idea that they have never been grassed over. When the freshening up comes after the rains, he may conclude that they are becoming turfed over for the first time.

## FLORA OF THE SAND HILL REGION.

There are, roughly speaking, three floras in the region. The hills are sparsely covered with the typical sand hill species. The dry valleys and the upper parts of the wet valleys farthest from the lake have a characteristic flora scarcely different from that of the prairies of eastern Nebraska. It is evidently the prairie flora of the surrounding regions mixed with a few individuals which

have crept down from the hills. The wet valleys, especially around the lakes, have a flora of their own, and it is in this flora that there is the most localization of species. The species peculiar to the sand hills and blow-outs and the prairie species of the dry valleys are common to the entire region, from the point where we entered the sand hills east of Alliance to the sand hills near Neligh in Antelope county. We also found the same sand hill species—no more and no less—on a sandy bluff near Loretto in Boone county. The species peculiar to the wet valleys change as one passes from west to east, only two or three being found throughout the region. A species is frequently confined to isolated patches or widely separated lake-basins.

The following species are to be found in every blow-out throughout the region: *Stipa comata*, *Oryzopsis cuspidata*, *Redfieldia flexuosa*, *Tradescantia virginica*, *Eriogonum annuum*, *Oenothera serrulata*, *Prunus pumila*, *Lathyrus sp.* (*ornatus?*), *Astragalus pictus* var. *filifolius*, *Hymenopappus filifolius*. Not only are these species in every blow-out, but they are on every hill. Besides these, the most common sand hill inhabitants are: *Andropogon scoparius*, *A. hallii*, *Muhlenbergia pungens*, *Abronia fragrans*, *Rosa virginiana* var. *arkansana*, *R. fendleri*, *Acerates viridiflora*, *Erigeron divergens*, *Haplopappus spinulosus*, *Chrysopsis villosa*, and *Laciniaria squarrosa* var. *intermedia*.

Few species are common to all the wet valleys or to all the wet valleys of a particular locality. The most widely distributed are: *Sisyrinchium angustifolium*, *Salix longifolia*, *Glycyrrhiza lepidota* *Amorpha fruticosa*, *Utricularia vulgaris*, *Lobelia spicata*, and *Rudbeckia hirta*.

The dry valley flora includes about the same species as the prairie flora of Lancaster county. In addition there are *Haplopappus spinulosus* and *Cnicus undulatus*. *Prunus demissa* was found in a very peculiar dry valley in Sheridan county. It is common on the banks of the North Loup and in wet valleys in the lake region of eastern Cherry county.

## THE PRAIRIE FLORA OF BOX BUTTE COUNTY.

The prairie in Box Butte county was covered with *Agropyrum glaucum* and *Stipa comata*, the former, apparently, predominating on lower or waste ground, the latter on high ground. *Bulbilis dactyloides* was found in small patches, and *Oryzopsis cuspidata*, a typical sand hill species, had wandered out along the trail seven or eight miles from the hills.

The most striking flowers of the prairie were *Tradescantia virginica*, *Erysimum asperum*, *Lupinus plattensis*, *Spiesia lamberti*, *Astragalus adsurgens*, and *Thelesperma filifolium*, all very common. *Pentstemon albidus*, *Astragalus mollissimus*, and *Erigeron pumilus* were also common near Alliance. As one approaches the sand hills, these disappear. *Monarda citriodora* becomes very common on the prairie, and *Phlox douglasii* and *Polygala alba* on the hill-sides.

Several of the typical sand hill plants had wandered out on the prairie and were found within a few miles of the Sheridan county line. *Stipa comata Tradescantia virginica*, *Phlox douglasii*, and *Plantago patagonica* var. *gnaphalioides* were common to the prairies of Box Butte county and the sand hills.

## NOTES ON THE FLORA OF BROWN, ROCK, HOLT, AND ANTELOPE COUNTIES.

We saw only the worst parts of Sheridan and Cherry counties. But on leaving the lake region, we came at once upon the best part of Brown county. We left the lake region of Cherry county through a wet valley over thirty miles in length, in which, for the last few miles, flows a branch of Plum creek. This valley had most of the characteristics of the ordinary wet valley, but the soil was better, and in the last third of the valley it was not so marshy, and the hills at the sides were not so completely of pure sand. The commonest plant in this valley was *Froelichia floridana*. Besides a large number of wet valley species, we found as we progressed the ordinary prairie flora. Soon after entering Brown county, we came quite suddenly upon a new region. One of the

first things that attracted our notice was a small clump of *Populus monilifera* on the banks of a small stream. We had not seen a tree or woody plant larger than a dwarf willow since the day we started.

The prairie in Brown county was yellow in every direction with *Rudbeckia columnaris* and in some fields it had the appearance of being cultivated. Other common plants were *Oenothera serrulata*, *O. rhombipetala*, *O. albicaulis*, and *Laciniaria scariosa*.

We did not see the best portion of Rock county. The part we traversed resembled, on a smaller scale, the region at the head of the North Loup. For the most part we were in wet valleys, full of small ponds and swamps, and bounded by low sand hills with occasional blow-outs. *Lilium philadelphicum* and *Lobelia spicata* were common.

We entered Holt county southwest of Stuart, and passed through low, wet prairies covered with a luxuriant growth of grass. The whole region is devoted to hay-making, and seems excellently adapted to it.

In the part of Antelope county we passed through we found ourselves again in the sand hills. The well known sand hill species—especially *Andropogon hallii*—were everywhere. In addition there were *Calamovilfa longifolia* and *Cycloloma platyphyllum* in great abundance.

## LIST OF PLANTS COLLECTED, AND NOTES.

(Species designated by a * not previously reported.)

*Laciniaria squarrosa* (L.) Hill var. *intermedia* (Lindl.) DC.

Cherry county, July 23. (137) Sand hills throughout the region.

*Laciniaria scariosa* (L.) Hill.

Cherry county, July 27. Dry valleys, and prairie in Brown county.

*Laciniaria punctata* (Hook.) OK.

Dry valleys, wet valley Cherry county, July 27.

*Laciniaria pycnostachya* (Michx.) OK.

Wet valley, Cherry county, July 27, also wet valleys, Rock county, July 30.

*Chrysopsis villosa* (Pursh) Nutt.

Cherry county, July 27. Sand hills throughout the region.

*Haplopappus spinulosus* (Pursh) DC.

Sheridan county, July 11. (66) Sand hills throughout the region.

*Solidago speciosa* Nutt. var. *rigidiuscula* Torr. & Gray.

Dry valleys in Sheridan and western Cherry counties.

*Aster salicifolius* Lam.

In canon, Long Pine, July 29. (153)

*Erigeron divergens* Torr. & Gray.

Cherry county, July 20. (250) Sand hills throughout the region.

**Erigeron ramosus* (Walt.) BSP. var. *beyrichii* (Fisch. & Mey.) Torr. & Gray.

In wet valley near Hannah's ranch, Cherry county, July 27. (154)

*Erigeron pumilus* Nutt.

Box Butte county, July 6. (155)

*Antennaria plantaginifolia* (L.) Hook.

Cherry county, July 14. (60) Prairies, Box Butte county, and dry valleys throughout the region.

*Rudbeckia augustifolia* (DC.) Benth. & Hook.

Dry valleys, western Cherry county.

*Rudbeckia columnaris* Pursh.

Cherry county, July 14. (146) In wet valleys, central Cherry county; prairies, Brown county.

*Rudbeckia columnaris* Pursh var. *pulcherrima* (DC.) Torr. & Gray.

LaPorte's ranch, Cherry county, July 23. (147)

*Rudbeckia hirta* L.

Sheridan county, July 13. (145) Wet valleys throughout the region.

*Helianthus annuus* L.

Waste places around a ranch, Cherry county, July 26.

*Helianthus petiolaris* Nutt.

Box Butte county, July 7. (61)

*Helianthus rigidus* (Cass.) Desf.

Cherry county, July 26. (71) Sand hills, and dry valleys throughout the region.

*Thelesperma gracile* Gray.

Cherry county, July 18. (141) Sand hills, western and central Cherry county.

*Thelesperma filifolium* Gray.

Prairies, Box Butte county, July 6. (142)

*Hymenopappus filifolius* Hook.

Box Butte county, July 7. (59) Sand hills throughout the region. .

*Crepis runcinata* (James) Torr. & Gray.

In wet valley, Sheridan county, July 9. (152)

*Artemisia canadensis* Michx.

Brown county, July 29. (65) (Lower leaves sparsely silky canescent. Farther south than its usual range. S.)

*Artemisia ludoviciana* Nutt.

Cherry county, July 26. (62) Dry valleys throughout the region.

**Senecio aureus* L. var. *borealis* Torr. & Gray.

Sand hills, eastern Sheridan county, July 9. (61) (Agrees with specimens in Herb. Engelm. collected by Hayden, "Loup Fork, July 24," 186–, and named by Dr. Gray. This is much farther south than its usual range, and it is probably one of the "buffalo disseminated plants." See Bot. Gaz. XVII, 321. S.)

*Cnicus undulatus* (Nutt.) Gray.

Dry valley, Sheridan county, July 21, (63).

*Cnicus undulatus* (Nutt.) Gray var. *canescens* (Nutt.) Gray.

Prairies, eastern edge of Box Butte county, July 7. (64) Sand hills throughout the region.

*Troximon cuspidatum* Pursh.

Dry valleys, Sheridan county.

*Lactuca ludoviciana* (Nutt.) DC.

Wet valley, Cherry county, July 26. (68,70)

*Lactuca pulchella* (Nutt.) DC.

Cherry county, July 15. (69) Valleys throughout Cherry county.

*Lygodesmia juncea* (Pursh) Don.

Cherry county, July 19. (36) Sand hills and blow-outs throughout the region. (The length of the upper leaves approaches *L. rostrata L. juncea.* Gr. But it is 3-5 flowered, corymbosely branched, flowers terminal on the upper branches. I consider it an intermediate form between *juncea* and *rostrata.* S.)

*Symphoricarpos occidentalis* (R.Br.) Hook.

Cherry county, July 23. (54) Valleys here and there throughout the region.

*Galium trifidum* L.

In thicket of *Prunus demissa,* falls of the North Loup, Cherry county, July 22. (193)

*Specularia perfoliata* (L.) A.DC.

Box Butte county, July 7. (211)

*Campanula aparinoides* Pursh.

Along the North Loup and in wet valleys in the lake region, Cherry county, July 26. (186)

*Lobelia spicata* Lam.

Cherry county, July 19. (37) Wet valleys throughout the region.

*Acerates viridiflora* (Raf.) Ell.

Cherry county, July 15. (134) Sand hills throughout the region.

*Acerates viridiflora* (Raf.) Ell. var. *linearis* Gr.

Cherry county, July 23. (134 a) Sand hills, Cherry county.

*Asclepias verticillata* L.

Dry valley, Cherry county, July 23. (135)

*Asclepias stenophylla* Gray.

Sand hills. Sheridan county, July 12, Cherry county, July 23. (136)

*Asclepias arenaria* Torr.

Cherry county, July 20. (133) Sand hills, western and central Cherry county.

*Asclepias speciosa* Torr.

Cherry county, July 19. (132) Sand hills and dry valleys, Sheridan county, and western Cherry county.

*Asclepias incarnata* L.

Wet valleys at head of North Loup and in lake region, Cherry county, July 20, 26. (131)

*Apocynum cannabinum* L.

Cherry county, July 19. (140) Dry valleys, Sheridan county and western Cherry county.

*Plantago eriopoda* Torr.

In wet valley, Sheridan county, July 9. (177)

*Plantago patagonica* Jacq. var. *gnaphalioides* (Nutt.) Gray.

Prairies, Box Butte county, July 6. (76) Dry valleys throughout the region.

*Verbena hastata* L.

Wet valley, Cherry county, July 23. (77)

*Verbena stricta* Vent.

Valleys here and there in Cherry county. (55)

*Verbena bracteosa* Michx.

Box Butte county, July 6; Cherry county, July 24. (157) Wet valleys near the Gordon and in the lake region.

*Lycopus sinuatus* Ell.

Wet valleys near the Gordon and in the lake region, July 24. (83)

*Koellia virginiana* (L.) OK.

Brown county, July 29. (160)

*Hedeoma hispida* Pursh.

Box Butte county, July 6. (75)

*Monarda citriodora* Cerv.

Prairie, Box Butte county, July 7. (57)

*Stachys palustris* L.

Cherry county, July 15. (56) Wet valleys, eastern Sheridan county, and lake region of Cherry county.

*Teucrium occidentale* Gray.

Valley of Dad's Lake, July 26.

*Utricularia vulgaris* L.

Cherry county, July 15. (72) In the Gordon, July 24; wet valleys throughout the region.

*Pentstemon gracilis* Nutt.

Wet valleys, western Cherry county, July 14. (173)

*Pentstemon albidus* Nutt.

Prairies, Box Butte county, July 6. (174)

*Pentstemon caeruleus* Nutt.

Box Butte county, July 7. (175)

*Pentstemon grandiflorus* Nutt.

Prairie, Brown county, July 29.

*Mimulus glabratus* HBK. var. *jamesii* (Torr. & Gray) Gray.

Margin of cold spring in wet valley at Dye's ranch, Cherry county, July 19. (79)

*Monniera rotundifolia* Michx.

In dried-up pond, Cherry county, July 15. (81)

*Veronica peregrina* L.

Box Butte county, July 6. Wet valley at head of North Loup, Cherry county, July 19. (158)

*Gratiola virginiana* L.

Wet valleys near the head of the North Loup, Cherry county, July 20. (176)

*Physalis mollis* Nutt. var. *cinerascens* Gray.

Dry valley, Sheridan county, July 12. (78) (Apparently the same as specimens in Herb. Univ. collected by Mr.

Rydberg in Scott's Bluff county. The typical *mollis* is a much smaller leaved plant of the Texas-Arizona region. S.)

*Physalis virginiana* Mill.

Dry valleys, Sheridan county, July 12. (150)

*Physalis lanceolata* Michx.

Dry valleys, Sheridan county, July 12. (151)

*Lappula redowskii* (Hornem.) Greene.

Box Butte county, July 6. (169)

**Krynitzkia jamesii* (Torr.) Gray.

Box Butte county, July 7. (170)

*Krynitzkia fendleri* Gray.

Dry valley, Sheridan county, July 9. (172)

*Lithospermum angustifolium* Michx.

Box Butte county, July 7. (171)

*Lithospermum carolinense* (Walt.) McM.

Sheridan county, July 11. (80)

*Onosmodium carolinianum* (Lam.) DC. var. *molle* (Michx.) Gray.

Dry valley, Sheridan county, July 9. (58)

*Ellisia nyctelea* L.

Box Butte county, July 7. (73) (*Macrocalyx* Trew, does not seem available, as it was not applied in a binomial name. P.)

*Phlox douglasii* Hook.

Box Butte county, July 7. (74) Sand hills, Sheridan county, and western Cherry county.

*Gilia linearis* (Nutt.) Gray.

Box Butte county, July 7. (159)

*Ipomoea leptophylla* Torr.

Brown county, July 29. (82)

*Cuscuta arvensis* Beyrich?

On *Polygonum sp.*, not in flower, Joy's ranch, Sheridan county, July 10. (205)

*Steironema lanceolatum* (Walt.) Gray.

Wet valleys, lake region of Cherry county, July 26. (165)

*Comandra pallida* A.DC.

Sand hills, Sheridan county, July 12, western Cherry county, July 15. (255)

*Lupinus plattensis* Wats.

Box Butte county, July 7. (51)

*Lotus americanus* (Nutt.) Bisch.

Cherry county, July 19. (42) Wet valleys at head of North Loup, and in lake region.

*Psoralea campestris* Nutt.

Dry valley, Sheridan county, July 9. (45)

*Psoralea lanceolata* Pursh.

Sheridan county, July 9. (46) Sand hills and blow outs throughout the region.

*Psoralea incana* Nutt.

Box Butte county, July 7. (47)

*Psoralea esculenta* Pursh.

Dry valleys Sheridan county, July 13. (44)

*Amorpha canescens* Nutt.

Sheridan county, July 13. (43) Dry valleys throughout the region.

*Amorpha fruticosa* L.

Banks of the North Loup; wet valleys throughout the region.

*Kuhniastera purpurea* (Vent.) MacM.

Brown county, July 28. (38) Dry valleys throughout the region.

*Kuhniastera candida* (Willd.) OK.

With the preceding. (39)

*Kuhniastera villosa* (Nutt.) OK.

Sand hills and dry valleys throughout the region.

*Astragalus mollissimus* Torr.

Box Butte county, July 6. (48)

*Astragalus caryocarpus* Ker.

Dry valley, Sheridan county, July 13. (50)

*Astragalus microlobus* Gray.
Box Butte county, July 7. (53)

*Astragalus adsurgens* Pall.
Box Butte county, July 6. (156)

*Spiesia lamberti* (Pursh) OK.
Box Butte county, July 6. (41)

*Glycyrrhiza lepidota* Nutt.
Cherry county, July 26. (52) Wet valleys throughout the region.

*Lathyrus sp.* (*ornatus* Nutt?)
Sand hills and blow-outs throughout the region, very common. In fruit only. (49)

*Prunus demissa* Walpers.
Dry valley, Sheridan county, July 12; Banks of North Loup, Cherry county, July 21, Brown county, July 29. Wet valleys in the lake region. (91)

*Geum strictum* Ait.
Falls of the North Loup, Cherry county, July 21. (90)

*Potentilla arguta* Pursh.
Cherry county, July 22. (94) Wet valleys at head of North Loup and along the Gordon.

**Potentilla pennsylvanica* L. var. *strigosa* Pursh.
Dry valleys, Sheridan county, July 12. (85)

*Potentilla norvegica* L.
Wet valley, Cherry county, July 21. (86)

*Agrimonia eupatoria* L.
In canon, Long Pine, July 29. (84)

*Rosa fendleri* Crepin.
Sheridan county, July 9. (88) Sand hills, Sheridan county, and western and central Cherry county.

*Rosa virginiana* Mill. var. *arkansana* (Porter) Best.
Dry valleys, Sheridan county, July 12, Cherry county, July 23. (87) Sand hills throughout Cherry county.

*Amelanchier alnifolia* Nutt.
In canon, Long Pine, July 29.

*Ammannia coccinea* Rottb.

Cherry county, July 26. (89) A peculiar form, found once in a wet valley in the lake region.

*Lythrum alatum* L.

Valley of Dad's Lake, Cherry county, July 26. (162)

*Oenothera albicaulis* Nutt.

Brown county, July 28. (212)

*Oenothera coronopifolia* Torr. & Gray.

Box Butte county, July 6. (213)

*Oenothera rhombipetala* Nutt.

Sheridan county, July 12. (214) Dry valleys and sand hills throughout the region; prairies, Brown county.

*Oenothera serrulata* Nutt.

Sheridan county, July 12. (215) Prairies, Box Butte county, July 7, Brown county, July 28. Blow-outs and sand hills throughout the region. In the sand hills it has a different aspect—low, very woody, spreading, much branched, flowers dark yellow. On the prairie it is erect, simple, slightly woody at base only, flowers light yellow.

*Gaura coccinea* Nutt.

Box Butte county, July 6. (210)

*Mamillaria vivipara* (Nutt.) Haw.

Cherry county, July 15. (216) Prairies, Box Butte county, and sand hills and dry valleys throughout the region.

*Opuntia rafinesquii* Engelm.

Cherry county, July 15. (217) Sand hills throughout the region.

*Opuntia fragilis* (Nutt.) Haw.

Joy's ranch, Sheridan county, July 10. (218) Sand hills, Sheridan county.

**Cornus pubescens* Nutt.

Long Pine, July 29. (183) (Has both appressed and silky hairs on the same leaves, as in *C. baileyi* Coulter & Evans, but the stone is that of *C. pubescens.* It may possibly be a hybrid between *C. pubescens* and *C. stolonifera* Michxs.)

*Cicuta virosa* L. var. *maculata* (L.) Coulter & Rose.
Wet valley, LaPorte's ranch, Cherry county, July 22. (196)

*Euphorbia petaloidea* Engelm.
Sheridan county, July 11. (96) Blow-outs, Sheridan county, and Western Cherry county.

*Euphorbia hexagona* Nutt.
Sand hills, Antelope county, August 2. (203)

*Croton texensis* Muell.
Sand hills, Sheridan county, July 9. (95)

*Polygala verticillata* L.
Cherry county, July 21. (93) Dry valleys throughout the region.

*Polygala alba* Nutt.
Sandy hillsides, eastern Box Butte county, July 7. (184)

*Polygala sanguinea* L.
Wet valley, Rock county, July 30. (185)

*Rhus radicans* L.
Banks of the North Loup, July 23. Wet valleys throughout the region.

*Linum sulcatum* Riddell.
Prairies, Box Butte county, July 7. (283) Sand hills and blow-outs, Sheridan county, and western Cherry county.

*Oxalis stricta* L.
Pullman, Cherry county, July 20. (167)

*Malveopsis coccinea* (Nutt.) OK.
Box Butte county, July 6. (166)

*Cleome serrulata* Pursh.
Rock county, July 28. (163) Waste places around ranches (only) in eastern Cherry county.

*Cristatella jamesii* Torr. & Gray.
Side of canon, in sandy soil, Brown county, July 29. (164)

*Lesquerella argentea* (Pursh) MacM.
Box Butte county, July 7. (194)

*Erysimum asperum* DC.

Box Butte county, July 7. (195)

*Argemone platyceras* Link & Otto.

Prairies, Box Butte county, July 7. (161) Sand hills throughout the region.

*Nymphaea advena* Solander.

In lake, Hannah's ranch, Cherry county (lake region), July 27. (168)

*Anemone cylindrica* Gray.

Dry valley, Cherry county, July 15. (180)

*Ranunculus aquatilis* L. var. *trichophyllus* Chaix.

Ponds in wet valleys at the head of the North Loup, July 19, in the North Loup, July 20, in the Gordon, July 24. (181)

*Ranunculus cymbalaria* Pursh.

Wet valley, Wilson's ranch, Sheridan county, July 11. (182)

*Delphinium azureum* Michx.

Cherry county, July 23. (179) Dry valleys throughout the region.

*Paronychia jamesii* Torr. & Gray.

Sandy hillsides, Box Butte county, July 7. (189)

*Silene antirrhina* L.

Dry valleys, Cherry county, July 20. (188)

*Cerastium nutans* Raf.

Prairies, Box Butte county, July 7, wet valleys at the head of the North Loup, Cherry county, July 20. (187)

*Arenaria lateriflora* L.

In canon, Long Pine, July 29. (192)

*Lychnis drummondii* Wats.

Dry valley, Sheridan county, July 12. (190)

*Allionia angustifolia* (Nutt.) OK.

Box Butte county, July 6. (148)

*Allionia hirsuta* Pursh.

Dry valley, Sheridan county, July 12, valley of Pelican Lake, Cherry county, July 26. (143)

*Abronia fragrans* Nutt.

Sand hills, Sheridan county, July 7–9. (147)

*Froelichia floridana* (Nutt.) Moq.

Wet valley, Cherry county, July 27. (198)

*Cycloloma platyphyllum* (Michx.) Moq.

Dry valley, Cherry county, July 19. (99) Sand hills and waste places around Neligh, Antelope county, August 2.

*Chenopodium leptophyllum* Nutt.

Dry valley, Sheridan county, July 9. (97)

*Eriogonum annuum* Nutt.

Sheridan county, July 11. (199) Sand hills and blow-outs throughout the region.

*Polygonum emersum* (Michx.) Britton.

Cherry county, July 19. (200) Wet valleys throughout Cherry county.

*Polygonum amphibium* L.

In lake, Hannah's ranch, lake region of Cherry county, July 26. (200)

*Polygonum hartwrightii* Gray.

Wet valleys, lake region, July 26. (201)

*Rumex venosus* Pursh.

Box Butte county, July 7, Sheridan county, July 9. (197) Sand hills throughout Sheridan county.

*Rumex persicarioides* L.

Antelope county, August 2. (204)

*Salix longifolia* Muhl.

Sheridan county, July 11. (208) Small pools in passes between the valleys and in the sand hills throughout the region.

*Salix cordata* Muhl. var. *vestita* Anders.

Cherry county, July 22. (209) Wet valleys at the head of the North Loup and in the lake region.

*Salix tristis* Ait.

Wet valleys, Cherry county and Brown county, July 27. (280)

*Habenaria leucophaea* (Nutt.) Gray.

Cherry county, July 19. (219) Wet valleys at the head of the North Loup and in the lake region.

*Sisyrinchium angustifolium* Mill.

Joy's ranch, Sheridan county, July 10. (223) Wet valleys throughout the region.

*Yucca glauca* Fraser.

Sheridan county, July 11. (222) Sand hills, Sheridan county, and western Cherry county.

**Allium reticulatum* Fraser.

Sandy hillsides, Box Butte county, July 7; sand hills, western Sheridan county. (225)

*Lilium philadelphicum* L.

Wet valleys at the head of the North Loup, July 20; wet valley, Rock county near Newport, July 30. (220)

*Juncus bufonius* L.

Wet valley, Oxyoke ranch, Sheridan county, July 17. (191)

*Juncus marginatus* Rostk.

Around lake, Hannah's ranch, July 27. (237)

*Juncus nodosus* L.

Valley of Pelican Lake, Cherry county, July 26. (239)

*Juncus nodosus* L. var. *megacephalus* Torr.

Valley of Pelican Lake, July 26. (240) Grew near the lake in a different part of the valley from the preceding, and in much greater abundance.

* *Juncus longistylis* Torr. & Gray.

Wet valleys, Sheridan county, July 9. (241)

*Juncus balticus* Deth.

With the preceding. (242)

*Commelina virginica* L.

Sides of sand hills around wet valley, Oxyoke ranch, Cherry county (just beyond Sheridan county line), July 14. (222)

*Tradescantia virginica* L.

Prairies, Box Butte county, July 6, (221) Sand hills and

blow-outs throughout the region; one of the commonest blow-out inhabitants.

*Panicum virgatum* L.

Dry valley, Cherry county, July 21. (106)

*Panicum dichotomum* L.

Sheridan county, July 12. (123)

*Spartina gracilis* Trin.

Wet valley, Sheridan county, July 9. (117)

*Spartina cynosuroides* (L.) Willd.

Wet valleys at head of North Loup, Cherry county, July 19. (130)

*Andropogon scoparius* Michx.

Sand hills throughout the region.

*Andropogon hallii* Hack.

Antelope county, August 2. (206) Sand hills from eastern Cherry county eastward.

*Alopecurus geniculatus* L.

Box Butte county, July 12. (112)

*Stipa comata* Trin. & Rupr.

Prairies, Box Butte county, July 6. (125) Sand hills throughout the region.

*Oryzopsis cuspidata* (Nutt.) Benth.

Box Butte county, July 7. (114) Sand hills, especially blow outs, Sheridan county and western Cherry county. (*Stipa membranacea* Pursh; *O. membranacea* (Pursh) Vasey. But as there was already a *Stipa membranacea* L.—*Festuca uniglumis* Sol.—Pursh's name is hardly available. P.)

*Oryzopsis micrantha* (Trin. & Rupr.) Thurber.

In canon, Long Pine, July 29. (101)

*Muhlenbergia pungens* Thurb.

Blow-outs and sand hills throughout the region.

*Phleum pratense* L.

In canon, Brown county, July 29. (124)

*Sporobolus airoides* (Steud.) Torr.

Joy's ranch, Sheridan county, July 10. (128)

*Sporobolus cryptandrus* (Torr.) Gray.
Cherry county, July 21. (107)
*Sporobolus cuspidatus* (Torr.) Scrib.
Cherry county, July 14. (109)
*Agrostis hiemalis* (Walt.) BSP.
Dry valley, Sheridan county, July 9. (119)
*Calamovilfa longifolia* (Hook.) Hack.
Antelope county, August 2. (120)
*Calamagrostis stricta* Trin.
Sheridan county, July 11. (252)
*Bouteloua oligostachya* (Nutt.) Torr.
Broad fields in the valley of the North Loup, Cherry county, July 24. (105) These broad places in the valley of the North Loup are miniature prairies with all the characteristics of dry valleys. The narrow places in the valley are wet and marshy.
*Bouteloua hirsuta* Lag.
Sand hills, valley of the Gordon, July 24.
*Bulbilis dactyloides* (Nutt.) Raf.
Prairies, Box Butte county, July 7. (113) Dry valleys, Sheridan county.
*Phragmites vulgaris* (Lam.) BSP.
Dad's Lake, July 26.
*Munroa squarrosa* Torr.
In blow-out near the forks of the North Loup, Cherry county, July 21. (127)
*Koeleria cristata* (L.) Pers.
Box Butte county, July 7; Holt county, July 31. (121)
*Eatonia obtusata* (Michx.) Gray.
Shallow pond, Oxyoke ranch, Sheridan county, July 13. (110)
*Eatonia obtusata* (Michx.) Gray var. *robusta* Vasey.
Cherry county, July 22. (100)
*Catabrosa aquatica* (L.) Beauv.
Margins of cold spring in wet valley, Dye's ranch, Cherry county, July 19. (104)

*Eragrostis multiflora* (Forsk.) Aschs.
Brown county, July 28. (102)

*Distichlis spicata* (L.) Greene var. *stricta* Thurber.
Low prairie, Box Butte county, July 7; wet valley (alkaline) Sheridan county, July 9. (116)

*Poa compressa* L.
Sheridan county, July 9. (122)

*Redfieldia flexuosa* (Thurber) Vasey.
Antelope county, August 1. (207) Blow-outs throughout the region.

*Festuca octoflora* Walt.
Box Butte county, July 7. (115)

*Festuca ovina* L.
Box Butte county, July 7. (111)

*Bromus ciliatus* L.
Cherry county, July 22. (108)

*Agropyrum glaucum* (Desf.) R. & S. var. *occidentale* Vasey & Scribner.
Box Butte county, July 6. (126)

*Hordeum jubatum* L.
Dry valleys, Sheridan county, July 9. (118)

*Elymus canadensis* L.
Wet valleys at head of North Loup and in central Cherry county, July 19, 23. (103)

*Cyperus aristatus* Rottb.
Sheridan county, July 12; Cherry county, July 19. (245) Wet valleys throughout the region.

*Scirpus lacuster* L.
Cherry county, July 27. (238) Wet valleys at head of North Loup and in the lake region. Grows very tall, often twelve feet.

*Carex douglasii* Boott.
Sheridan county, July 12; valley of Pelican Lake, Cherry county, July 26. (236)

*Typha latifolia* L.
Wet valleys along the North Loup, Cherry county, July 20.

*Sparganium eurycarpum* Engelm.

Wet valleys at head of North Loup and near the falls, July 20. (224)

*Lemna minor* L.

In old channel of the North Loup, Cherry county, July 22. (272)

*Lemna trisulca* L.

Wet valleys near the head of the North Loup in small ponds. July 19; Marsh Lake, July 26. (260)

*Alisma plantago* L.

Wet valleys near the North Loup, July 20, in the North fork, July 21. (233)

*Sagittaria variabilis* Engelm. var. *angustifolia* Gray.

In the north fork of the North Loup, July 21. (232)

**Sagittaria variabilis* Engelm. var. *diversifolia* Gray.

Small pond in wet valley, Oxyoke ranch, Sheridan county, July 13. (235)

*Triglochin maritimum* L.

Wet valley, Sheridan county, July 9. (226)

*Potamogeton natans* L.

In lake, Hannah's ranch, Cherry county, July 27. (228)

*Potamogeton pectinatus* L.

With the preceding (229)

*Potamogeton heterophyllus* Schreb. var. *graminifolius* Gray.

Ponds along the North Loup, Cherry county, July 20. (234)

**Naias flexilis* (Willd.) Rostk & Schm.

With the preceding (231)

*Ruppia occidentalis* Wats.

Small pond in a wet valley, Sheridan county, July 10. (230)

*Selaginella rupestris* (L.) Spreng.

High prairie, Brown county, July 28. (271)

*Marsilia vestita* Hook. & Grev.

Small ponds, Box Butte county, July 7. (275)

*Aspidium thelypteris* (L.) Sw.

Wet valleys at the head of the North Loup, July 19; falls of the North Loup, July 22. (278)

*Onoclea sensibilis* L.

With the preceding (277)

*Cystopteris fragilis* (L.) Bernh.

Canons, Long Pine, July 29. (270)

*Marchantia polymorpha* L.

Banks of the North Loup at the falls, July 22. (274)

*Chara fragilis* Desv.

In small lake, Cherry county, July 19. (262)

*Chara contraria* A. Br.

Ponds in wet valleys, Cherry county, July 17, 18. (263)

* *Chara foetida* A. Br. var. *longibracteata* A. Br.

Ponds in wet valleys, Sheridan county, July 12, 13. (264)

*Chara coronata* A. Br.

In a small lake, Cherry county, July 18. (265)

*Simblum rubescens* Gerrard.

Sand hills, Cherry county, July 15. (273)

*Aecidium compositarum* Mart. var. *helianthi* Burrill.

On *Helianthus rigidus*, Cherry county, July 19. (3)

*Aecidium compositarum* Mart. var. *lygodesmiae* Webber.

On *Lygodesmia juncea*, Sheridan county, July 9. (12)

*Aecidium compositarum* Mart. var. *liatridis* Webber.

On *Laciniaria squarrosa* var. *intermedia*, Sheridan county, July 13. (6)

*Aecidium jamesianum* Pk.

On *Asclepias speciosa*, Cherry county, July 19. (7) On *Asclepias arenaria*, Cherry county, July 15. (9)

* *Aecidium chenopodii-fruticosi* DC.

On *Chenopodium leptophyllum*, Sheridan county, July 9. (Does not entirely agree with *Ae. ellisii* Tracy & Gall. It agrees well with specimens of *Ae. chenopodii-fruticosi* in *Mycotheca Universalis* No. 1028. *Ae. ellisii* and *Ae. chenopodii-fruticosi* are not very unlike. P.)

*Phragmidium subcorticium* (Schrank) Wint.

On *Rosa virginiana* var. *arkansana*, Sheridan county, July 12. (13)

**Phragmidium potentillae* (Pers.) Karst.

On *Potentilla pennsylvanica* var. *strigosa*, Sheridan county, July 12. (15)

*Gymnosporangium clavariforme* (Jacq.) Rees.

Spermagones on *Amelanchier alnifolia*, Long Pine, July 29. (5)

*Puccinia helianthi* Schw.

On *Helianthus annuus*, Cherry county, July 25. (1)

*Puccinia rubigo-vera* (DC.) Wint.

On wheat in a small patch near a ranch, Cherry county, July 25. (2)

**Puccinia troximontis* Pk.

On *Troximon cuspidatum* Sheridan county, July 12. (21) Hardly distinct enough from *P. hieracii* (Schum.) Mart. See Ellis N.A.F. no. 1452. P.)

**Puccinia physalidis Pk.*

On *Physalis virginiana*, Sheridan county, July 12. (20)

*Paccinia thesii* (Desv.) Chaill.

I. On *Comandra pallida*, Cherry county, July 15. (282) (*Fide* Webber in Catalogue, the *aecidium* of this species. It agrees sufficiently with *Ae. pustulatum* Curt. P.)

**Puccinia solidaginis* Pk.

On *Solidago speciosa* var. *rigidiuscula*, Cherry county, July 15. (18)

*Uromyces trifolii* (A. & S.) Wint. f. *glycyrrhizae* E &. E.

On *Glycyrrhiza lepidota*, Sheridan county, July 8. (11)

*Uromyces fabae* (Pers.) DBy.

On *Lathyrus sp.* (*ornatus?*), Cherry county, July 14. (19)

*Melampsora farinosa* (Pers.) Schroet.

On *Salix tristis*, Cherry county, July 27. (22)

*Exoascus pruni* Fkl.

On *Prunus pumila*, Sheridan county, July 12. (24)

*Septoria pruni* Ell.

On *Prunus demissa*, Cherry county, July 26. (4)

**Septoria lobeliae* Pk.

On *Lobelia spicata*, Cherry county, July 26. (16)

*Kellermannia yuccigena* E. & E.

On dead leaves of *Yucca glauca*, Sheridan county, July 11. (14)

*Cercospora teucrii* E. & K.

On *Teucrium sp.* (*occidentale?*), Cherry county, July 26. (10)

*Cercospora pentstemonis* E. & K.

On *Pentstemon grandiflorus*, Brown county, July 29. (281)

*Cercospora symphoricarpi* E. & E.

On *Symphoricarpos occidentalis*, Sheridan county, July 11. (17)

**Ramularia decipiens* E. &. E.

On *Rumex venosus*, Box Butte county, July 7. (25)

*Marsonia martinii* Sacc. & Ell.

On *Quercus macrocarpa*, Long Pine, July 29. (23)

*Coleochaete orbicularis* Pringsh.

On *Lemna trisulca*, Cherry county, July 19. (261)

*Coleochaete irregularis* Pringsh.

On *Chara contraria*, Cherry county, July 19. (268)

**Bulbochaete mirabilis* Wittr.

On *Chara foetida* var. *longibracteata*, Sheridan county, July 12. (267)

**Oedogonium stagnale* Kg.

In shallow pond in wet valley, Sheridan county, July 11. 269)

*Nostoc commune* Vauch.

On the ground and in shallow ponds in a pass between two wet valleys, Cherry county, July 15. (266) Forms dense masses of considerable size.

## II.

### Notes on the Canon Flora of Sioux County, With List of Plants Collected in July and August, 1892, by A. F. Woods.

Sioux county is the northwest corner county of Nebraska. It is drained to the northeast by Hat creek with its tributaries, the Long Branch, Sand, Dry, Sowbelly, Warbonnet, Squaw, and Antelope. These tributaries radiate from the principal stream in such a way as to present the appearance of a fan. The line of the divide between Hat creek valley and the White river country begins at the northeast corner of the county and passes southwest, almost directly towards the southwest corner of the county, to near Andrews, on the Fremont, Elkhorn and Missouri Valley railroad. From this point the general trend of the canon country is slightly northwest. Hat creek basin is several hundred feet below the level of the table land to the south.

The creeks have their sources in canons, which generally have the same name as the creek. In most cases the canons proper are cut and divided by many smaller side canons, sometimes very narrow and deep, having a rivulet at the bottom, fed by a spring at the head of the canon and by smaller springs at the side.

In nearly all cases the sides of the canons are covered with a rather dense growth of pine—*Pinus ponderosa* var. *scopulorum*. *Juniperus virginiana* occurs here also. Higher up, along the buttes, a prostrate form of *Juniperus communis* is very common. Lower down, the monotony of the pine forest is broken by the general intermingling of *Ulmus americana* (comparatively large trees, sometimes two or three feet in diameter), *Acer negundo*, *Populus monilifera*, *P. tremuloides*, *Ostrya virginiana*, *Fraxinus viridis*, *Betula occidentalis*, and *Acer glabrum*. The latter is usually a small tree, but in Squaw canon I found an individual about four inches in diameter and from fifteen to eighteen feet high. *Parthenocissus quinquefolia* and *Humulus lupulus* often by twining in and out among the underbrush and trees make dense jungles, difficult to penetrate.

Along the brooks in the wider canons is a dense growth of willow, mostly *Salix nigra*. *Lepargyraea argentea* is often seen along the upper edges of the draws further out in the valley. Everywhere in the canons is the smooth gooseberry, *Ribes oxycanthoides*, which has very large and fine fruit. *R. cereum*, *R. floridum*, and *R. aureum* are also quite common. Along the upper parts of the canons, and in open places, *Rhus canadensis* var. *trilobata* grows in dense patches, and everywhere, on high and low ground, in shade and in sun, in dry and in damp places, is *Rhus radicans*. For some reason, perhaps on account of its firmer leaves, it does not appear to be as poisonous as the ivy found in the eastern part of the state. *Prunus demissa* and *Amelanchier alnifolia* are common on the sides of the canons. Along the sides of the buttes and well up the sides of the canons is the little *Symphoricarpos racemosus* var. *pauciflorus*, and extending down into the canons is the larger *S. occidentalis*.

Among the most conspicuous of the herbaceous plants on the sides and tops of the buttes and canons are *Pentstemon glaber*, *P. gracilis*, *Campanula rotundifolia*, *Calochortus nuttallii* and *C. gunnisonii*, and *Zygadenus elegans*. All of these extend well down into the canons. *Phacelia circinata* and *Gilia iberidifolia* are confined to the upper edges of the canons and sides of the buttes. Here are found a large number of prairie species, extending down into the valley, or so-called bad land region. Down in the damper portions of the canons, among many others, are *Habenaria hyperborea*, *H. bracteata*, *Coralorrhiza multiflora* and *C. striata*, and *Spiranthes romanzoffiana*. *Pterospora andromedea* is common in the narrower canons, under the pines.

## LIST OF PLANTS COLLECTED.

(Species designated by a * not previously reported.)

*Eupatorium purpureum* L. Squaw canon. (352)
*Chrysopsis villosa* Nutt. var. *hispida* Gray. Squaw butte. (346)
*Haplopappus nuttallii* Torr. & Gray. Squaw butte. (347)

*Haplopappus spinulosus* (Pursh) DC. Squaw canon. (337)
*Solidago missouriensis* Nutt. var. *montana* Gray. Squaw canon. (345)
*Townsendia grandiflora* Nutt. Squaw butte. (341)
*Erigeron glabellus* Nutt. var. *mollis* Gray. Squaw canon. (345)
*Erigeron pumilus* Nutt. Squaw butte. (344)
*Rudbeckia angustifolia* (DC.) Benth. & Hook. Buttes. (358)
*Rudbeckia columnaris* Pursh. Buttes near Squaw canon. (354)
*Rudbeckia columnaris* Pursh var. *pulcherrima* (DC.) Torr & Gray. With the preceding. (353)
*Helianthus annuus* L. Squaw canon. (350)
*Helianthus rigidus* (Cass.) Desv. Fields around Squaw butte. (349)
*Hymenopappus filifolius* Hook. Squaw canon. (355)
*Actinella acaulis* (Pursh) Nutt. Squaw butte. (340)
*Crepis glauca* Torr. & Gray. Squaw canon. (358)
*Achillea millefolium* L. Squaw canon. (343)
*Cnicus undulatus* (Nutt.) Gray. Bad lands near Squaw butte. (348)
*Lactuca canadensis* L. Squaw canon. (359)
*Lactuca pulchella* (Nutt.) DC. Fields around Squaw canon. (342)
*Lygodesmia juncea* (Pursh) Don. In valleys. (356)
*Stephanomeria minor* DC. Bad lands. (357)
*Symphoricarpos occidentalis* (R.Br.) Hook. Squaw canon. (312)
*Symphoricarpos racemosus* Michx. var. *pauciflorus* Robbins Squaw butte. (417)
*Galium aparine* L. Squaw canon. (318)
*Galium boreale* L. Squaw canon. (317)
*Galium triflorum* Michx. Squaw canon. (316)
*Campanula rotundifolia* L. Squaw canon. (320)
*Asclepias speciosa* Torr. Squaw canon. (366)
*Asclepias verticillata* L. var. *pumila* Gray. Squaw canon. (365)
*Fraxinus viridis* Michx. Squaw canon. (313)

*Plantago patagonica* Jacq. var. *gnaphalioides* (Nutt.) Gray. Lowlands near canons. (329)
*Phryma leptostachya* L. Squaw canon. (314)
*Mentha canadensis* L. var. *borealis* (Michx.) Wood. Squaw canon. (323)
*Vleckia foenicula* (Pursh) Raf. Squaw canon. (324)
*Aphyllon ludovicianum* (Nutt.) Gray. Buttes near Squaw canon. (335)
*Orthocarpus luteus* Nutt. Squaw canon. (331)
*Veronica americana* Schw. In spring, Squaw canon. (315)
*Pentstemon glaber* Pursh. Buttes near Squaw canon. (334)
*Pentstemon gracilis* Nutt. With the preceding. (333)
*Physalis lanceolata* Michx. Around Squaw canon. (330)
*Krynitzkia glomerata* (DC.) Gray. Buttes. (325)
*Krynitzkia jamesii* (Torr.) Gray. With the preceding. (326)
*Phacelia circinata* Jacq. Buttes near Squaw canon. (327)
*Gilia iberidifolia* Benth. Buttes near Squaw canon. (328)
*Steironema ciliatum* (L.) Raf. Canons. (374)
*Pirola secunda* L. Squaw and Warbonnet canons. (319)
**Pterospora andromedea* Nutt. Squaw and Warbonnet canons. (309)
*Comandra pallida* A.DC. Squaw canon. (364)
*Thermopsis rhombifolia* Richardson. Upper edges of canons. (410)
*Lupinus plattensis* Wats. Squaw prairie. (403)
*Psoralea incana* Nutt. With the preceding. (404)
*Psoralea digitata* Nutt. Prairies. (405)
*Psoralea esculenta* Pursh. Prairies. (412)
*Psoralea lanceolata* Pursh. Squaw butte. (408)
*Psoralea tenuiflora* Pursh. Squaw butte. (407)
*Kuhniastera candida* (Willd.) OK. Prairies. (414)
*Kuhniastera purpurea* (Vent.) MacM. With the preceding. (402)
*Astragalus gracilis* Nutt. Squaw butte. (406)
*Astragalus hypoglottis* L. Squaw butte. (416)

*Astragalus multiflorus* Gray. Bad lands. (413)
*Astragalus pictus* Gray var. *filifolius* Gray. Squaw butte. (415)
*Spiesia lamberti* (Pursh) OK. Squaw prairie. (401)
*Glycyrrhiza lepidota* Pursh. Squaw canon. (409)
*Prunus demissa* Walp. Squaw and Warbonnet canons. (389)
*Geum album* Gmelin. Squaw canon. (391)
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*Potentilla arguta* Pursh. Squaw canon. (392)
*Agrimonia eupatoria* L. Common in canons. Hat creek. (383)
*Amelanchier alnifolia* Nutt. Squaw canon. (394)
*Epilobium adenocaulon* Haussk. Squaw canon. (321)
*Oenothera caespitosa* Nutt. Buttes near Squaw canon. (375)
*Oenothera serrulata* Nutt. With the preceding. (377)
*Gaura coccinea* Nutt. Squaw butte. (379)
*Ribes aureum* Pursh. Warbonnet canon. (398)
*Ribes cereum* Dougl. Near Warbonnet canon. (397)
*Ribes floridum* L'Her. Squaw canon. (400)
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*Cornus pubescens* Nutt. Squaw canon. (387)
*Sanicula marylandica* L. var. *canadensis* (L.) Torr. Squaw canon. (385)
*Musenium tenuifolium* Nutt. Bad lands. (388)
*Osmorrhiza longistylis* (Torr.) DC. Squaw canon. (387)
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*Polygala alba* Nutt. Prairie about Squaw canon. (411)
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*Viola canadensis* L. Squaw canon. (376)
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*Lesquerella argentea* (Pursh) MacM. Bad lands. (381)
*Argemone platyceras* Link & Otto. Squaw canon. (382)
*Thalictrum purpurascens* L. Squaw canon. (373)
**Actaea spicata* L. var. *arguta* Torr. Squaw canon. (384)
*Berberis repens* Lindl. Squaw butte. (395)
*Paronychia jamesii* Torr. & Gray. Squaw canon. (360)
*Arenaria franklinii* Dougl. Squaw butte. (361)
*Allionia hirsuta* (Nutt.) Pursh. Squaw canon. (336)
*Allionia nyctaginea* Michx. var. *oblongifolia* Gray. Squaw canon. (332)
*Abronia fragrans* Nutt. Prairies near Squaw canon. (371)
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*Eriogonum flavum* Nutt. Buttes. (363)
**Eriogonum jamesii* Benth. Bad lands. (362)
*Rumex venosus* Pursh. Fields and canons. (364)
*Humulus lupulus* L. Warbonnet canon. (311)
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*Spiranthes romanzoffiana* Cham. Squaw canon. (308)
*Habenaria bracteata* R.Br. Squaw canon. (306)
**Habenaria hyperborea* R.Br. Squaw canon. (305)
*Coralorrhiza multiflora* Nutt. Warbonnet canon. (307)
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*Yucca glauca* Fraser. Squaw canon. (304)
*Calochortus nuttallii* Torr. & Gray. Squaw canon. (301)
*Calochortus gunnisonii* Wats. Squaw canon. (302)
*Zygadenus elegans* Pursh. Squaw canon. (303)
*Disporum trachyspermum* (Wats.) Benth. & Hook. Squaw canon. (310)
*Spartina cynosuroides* (L.) Willd. Creek banks in canons. (432)
*Phleum pratense* L. Canons. (421)
*Oryzopsis cuspidata* (Nutt.) Benth. Prairies. (418)
*Agrostis asperifolia* Trin. Warbonnet canon. (435) Determined by F. L. Scribner.
*Agrostis exarata* Trin. Canons. (437)

*Calamovilfa longifolia* (Hook.) Hack. Bad lands. (433)
*Calamagrostis stricta* Trin. Prairies around canons. (420)
*Bouteloua oligostachya* (Nutt.) Torr. Valleys and bad lands (428)
*Bulbilis dactyloides* (Nutt.) Raf. Prairies and bad lands. (428)
*Koeleria cristata* (L.) Pers. Prairies and edge of bad lands. (424)
*Eatonia obtusata* (Michx ) Gray. Warbonnet canon. (436)
*Distichlis spicata* (L.) Greene var. *stricta* Thurber. Edge of bad lands. (423)
*Panicularia nervata* (Willd.) OK. Canons. (427)
*Bromus ciliatus* L. var. *purgans* Gray. Canons. (430)
*Agropyrum glaucum* (Desf.) R. & S. var. *occidentale* Vasey & Scribner. Prairies. (434)
*Agropyrum repens* (L.) Beauv. Common everywhere. (425)
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*Elymus striatus* Willd. Canons. (426)
*Botrychium virginianum* (L.) Sw. Squaw canon. (444)
*Cystopteris fragilis* (L.) Bernh. Squaw canon. (439)
*Woodsia oregona* Eaton Squaw canon. (440)
*Equisetum arvense* L. Squaw canon. (447)
*Equisetum levigatum* Braun. Squaw canon. (445)
*Equisetum robustum* Braun. Squaw canon. (447)
*Timmia megapolitana* Hedw. Squaw canon. (438)
**Psathyrella fulvipes* Mont. Sandy ground, Squaw canon. (500)
**Deconica bullacea* Bull. Squaw canon. (502)
**Psilocybe corneipes* Fr. On ground, Squaw canon. (501)
*Stropharia semiglobata* Batsch. On horse dung, Squaw canon. (503)
**Inocybe lanuginosa* Bull. On ground, Squaw canon. (504)
**Volvaria viscosa* Clements n.sp. Warbonnet canon. (505)
Pileus fleshy, campanulate-convex, smooth, very viscous, fulvous-ochraceous; stipe prominently bulbous, nearly

equal above, solid, smooth, ochraceous; volva ample, lobed, concolorous; lamellae touching, brown; spores ovoid-ellipsoid, dilutely flesh colored, with a large locule, 8x5 $\mu$. Pileus 6 cm. wide; stipe 6 cm. long, at base $1\frac{1}{2}$ cm. wide, above $\frac{1}{2}$ cm. Related to *V. primulina* Cooke & Massee. C.

**Mycena acuto-conica* Clements n.sp. In sand, Squaw canon. (506)

Pileus slightly membranaceous, persistently conical, acute, viscous, smooth, bright yellow; stipe long, equal, smooth, yellowish-brown; lamellae free, linear, deep ochraceous when dry; spores oblong-elliptical, 12x7-8 $\mu$. Pileus $2\frac{1}{2}$ cm. wide by 3 cm. high. Stipe 6-7 cm. long. Distinguished by its persistently conical, bright yellow pileus, and by the free ochraceous gills. C.

*Aecidium clematidis* DC. On *Clematis ligusticifolia.* (450)

*Aecidium pentstemonis* Schw. On *Pentstemon glaber.* (455)

**Puccinia anachoreta* Ell. & Hark. On *Calochortus gunnisonii.* (451)

*Puccinia menthae* Pers. On *Monarda fistulosa.* (459)

*Cronartium asclepiadeum* (Willd.) Fr. var. *thesii* Berk. On *Comandra pallida.* (454)

*Melampsora farinosa* (Pers.) Schroet. On *Salix tristis.* (452)

**Helvella infula* Schaeff. In sand, Warbonnet canon. (507)

**Helvella sulcata* Afzel. In wet sand, Squaw canon. (508)

**Septoria argophylla* E. & K. On *Psoralea incana.* (457)

**Septoria grossulariae* (Lib.) Westd. On *Ribes aureum.* (456)

**Septoria irregularis* Pk. On *Rhus radicans.* (453)

**Septoria podagrariae* Lasch. On *Osmorrhiza longistylis.* (458)

**Dothidea collecta* (Schw.) Ell. On twigs of *Celastrus scandens*, Squaw canon. (510)

**Hypoxylon crustaceum* (Sow.) Nits. On twigs, Squaw canon. (511)

## III.

MISCELLANEOUS ADDITIONS TO THE FLORA OF THE STATE, AND NEW OR NOTEWORTHY SPECIES FROM VARIOUS LOCALITIES.

COMPOSITÆ.

*Helenium nudiflorum* Nutt. Lincoln. (512)

VIOLACEÆ.

*Viola sagittata* Ait. Fremont. (513)

RANUNCULACEÆ.

*Caltha palustris* L. Norfolk. (514)

SALICACEÆ.

*Populus acuminata* Rydberg, in Bulletin Torrey Botanical Club XX., 46. Scotts Bluff county. (515)

(A new poplar, nearly related to the Balm of Gilead, *P. balsamifera*, and the Black Cottonwood, *P. angustifolia*, but distinguished by its leaves, which are green on both sides, long petioled, cuneate at the base, and with a long acumination. R.)

GRAMINEÆ.

*Paspalum leve* Michx. Ashland. (516)
*Cinna arundinacea* L. Lincoln. (517)

FILICES.

*Asplenium filix-foemina* (L.) Bernh. Long Pine. (441)

BRYACEÆ.

*Physcomitrium hookeri* Hampe. Valentine. (518)

AGARICINEÆ.

*Panaeolus campanulatus* L. On horse dung, Lincoln. (519)
*Coprinus granulosus* Clements n. sp.

Pileus membranaceous, ovoid-oblong, at length campanulate, closely radiate-sulcate, furfuraceous, pale yellowish-brown, umbo prominent, translucent, flavo-fuscous, at first covered with more or less persistent coarse brown gran-

ules; stipe white, hollow, equal, everywhere persistently pruinose; lamellae ventricose, brown, finally black, touching, at length free; spores oblong-elliptical, brownish-purple, 1-2 guttulate, 8-10x5-6 $\mu$.

Pileus 2½ cm. wide and high. Stipe 3 cm. x 4 mm.

On wet ground, in greenhouse, Lincoln. (520)

*Coprinus lagopides* Karst. In flower bed, Lincoln. (521)

*Coprinus mycenopsis* Karst. At base of stumps, Lincoln. (522)

*Psathyra obtusata* Fr. On damp ground, Lincoln. (523)

*Psathyra subnuda* Karst. On wet ground, Lincoln. (524)

*Psathyra helobia* Kalchbr. On wet earth in greenhouse, Lincoln. (525)

*Psathyra falkii* Weinm. On ground, Lincoln. (526)

*Psathyra schulzeri* Quel. On ground, Ashland. (527)

*Psilocybe hebes* Fr. On ground, Lincoln. (528)

*Psilocybe comta* Fr. In grass, Lincoln. (529)

*Psilocybe cernua* Vahl. In grass, Lincoln. (530)

*Psilocybe uda* Pers. On muddy ground, Lincoln. (531)

*Paxillus chrysophyllus* Trog. On pine railroad tie, Lincoln. (532)

*Galera pubescens* Gill. On ground, Valentine. (533)

*Galera tener* Schaeff. In grass, Lincoln. (534)

*Naucoria centunculus* Fr. On railroad ties, Lincoln. (535)

*Hebeloma latericolor* Mont. Wet ground at base of stumps Wabash. (536)

*Inocybe tuberosa.* Clements n.sp.

Pileus expanded, squamose, fleshy, deep brown; stipe tuberous, equal above, gilvous, lamellae rather few, adnexed, deep brown; spores obtuse, ovoid-elliptical, apiculate at one end, l-guttate, 6x4 $\mu$.

Pileus 3 cm. wide. Stipe 4 cm. long; at base 10 mm. above 7 mm. wide. Related to *I insequens* Britz. Lincoln. (537)

*Pholiota speciosa* Clements n.sp.

Pileus fleshy, plano-convex, squamose, umbonate, dirty-white; stipe fistulose, thick, equal, white; annulus small, white; gills free, crowded, soot colored; spores umber, ovoid, 1-2-guttate, 5x3½ $\mu$. Pileus 4-6 cm. wide; stipe 5 cm. long. Related to *P. gibberosa* Fr.

On ground, in woods, Wabash. (538)

*Pholiota praecox* Pers. var. *minor* Batl.

In grass, Lincoln. (539)

*Marasmius acicularis* B. & C. On dead wood, Valentine. (540)

*Marasmius rotula* (Scop.) Fr. On tree trunks, among moss, Elmwood, Lincoln. (541)

*Russula emetica* Fr. On ground, Milford. (542)

*Pleurotus limpidoides* Karst. On decaying stumps, Lincoln. (543)

*Tricholoma impolitum* Lasch. In wet saw dust, Lincoln. (544)

*Tricholoma favillare* Fr. On ground in greenhouse, Lincoln. (545)

*Tricholoma georgii* Fr. On ground, Lincoln. (546)

*Lepiota avellanea* Clements n.sp.

Pileus fleshy, dry, plane, drab-colored, cuticle lacerate toward the margin, forming appressed brown scales; stipe somewhat hollow, bulbous, brownish-fibrillose; annulus small, fleshy, concolorous, fixed, inferior; lamellae remote, attached to an indistinct collar, cream-colored, becoming reddish with age; spores irregularly ovate, acute at one end, 8-10x5-6 $\mu$.

Pileus 5 cm. wide, stipe 4 cm. long by 8 mm. wide. On ground in greenhouse, Lincoln. (547)

*Lepiota naucina* Fr. Damp ground in woods, Elmwood. (548)

*Lepiota implana* Berk. On ground, Lincoln. (549)

*Lepiota boudieri* Bres. On ground, Lincoln. (550)

HYMENOGASTRACEÆ.

*Phlyctospora fusca* Corda. Lincoln. (551)

UREDINEÆ.

*Puccinia cladophila* Pk. II. and III. on *Stephanomeria minor*, Scott's Bluff county. (26)

*Puccinia hieracii* (Schum.) Mart. On *Cnicus undulatus*, Scott's Bluff county. (27)

*Puccinia microsperma* B. & C. On *Lobelia syphilitica*, Lincoln. (1042) Not previously reported from eastern Nebraska.

*Uromyces caryophyllinus* (Schrank.) Schroet. On *Dianthus sinensis* in greenhouse, Lincoln. (1127) Determined by Dr. Bessey.

PEZIZEÆ.

*Sclerotinia tuba* Batsch? Lincoln. (552)

(As the specimens correspond to the very meager descriptions of *S. tuba*, I have referred them to that species provisionally. I append a description of them: Cups infundibuliform, arising from a black sclerotium, 1 cm. in diameter, soot-black, smooth, thin; stipe long, black, coriaceous, striate when dry, 4 cm. by 4-5 mm., gradually widening into the cup; asci cylindrical, 8-spored, 200x16 $\mu$. Cups $2\frac{1}{2}$-3 cm. wide by 2–$2\frac{1}{2}$ cm. high. C.)

*Helotium sulfurellum* E. & E. On dead limbs, Elmwood, Syracuse. (553)

*Neottiella calichroa* Boud. On earth in flower pot, Lincoln. (554)

*Lachnea laeticolor* Karst. On fallen leaves, Lincoln. (555)

*Lachnea fissilis* Sacc. & Cke. On wet boards in greenhouse, Lincoln. (556)

*Humaria rutilans* Fr. On ground with moss. Lincoln. (567)

*Peziza sepiatra* Cke. On earth in greenhouse, Lincoln. (568)

*Peziza vesiculosa* Bull. var. *minor* Sacc. On wet wood in greenhouse, Lincoln. (569)

*Geopyxis carbonaria* A. & S. On damp ground in woods, Lincoln. (570)

*Geopyxis pallidula* C. & P. On wet sand and wood in greenhouse, Lincoln. (571)

*Geopyxis tuberculosa* Sacc. & Cke. On damp ground in hot-bed, Lincoln. (572)

SPHAEROPSIDEÆ.

*Septoria verbenae* Rob. On *Verbena hastata*, Lincoln. (1024)

MELANCONIEÆ.

*Gloeosporium musarum* Cke. & Massee. On bananas, Lincoln. (573)

(*G. lagenarium* (Pass.) Sacc. var. *musarum* E. & E., in Journ. of Mycol. V. 155. The latter described by Ellis and Everhart in 1889, from specimens collected by me appears to be the same as *G. musarum* described, from specimens collected in Australia, in Grevillea XVI. 3. (1887) Conidia long-ellipsoid, rounded or sometimes pointed, $7\frac{1}{2}$-11x3-4 $\mu$. As is said by Ellis and Everhart l. c., scarcely differs from *G. lagenarium*. P.)

DEMATICEÆ.

*Cercospora brunkii* Ell. & Gal. On *Pelargonium sp.* (cultivated) Lincoln. (1126) Determined by Dr. Bessey.

DOTHIDIACEÆ.

*Dothidea collecta* (Schw.) Ell. On decaying stems, Lincoln. (574)

HYPOCREACEÆ.

*Megalonectria caespitosa* Speg. On block of wood supporting a south-Mexican orchid in greenhouse, Lincoln. (1125) This species was discovered by Spegazini in Brazil on fragments of wood, and does not seem to have been reported since. The block on which it was growing was an ordinary one picked up about the greenhouse, and it seems probable that the orchid was responsible for the presence of the fungus.

SPHÆRIACEÆ.

*Phomatospora berkleyi* Sacc. On stems of *Sambucus canadensis*, Saltillo. (575)

*Trichosphaeria pulchriseta* (Pk.) Ell. On herbaceous stems, Saltillo. (576)

*Hypoxylon perforatum* (Schw.) Sacc. On twigs of *Acer negundo*, Saltillo. (577)

ERYSIPHEÆ.

*Erysiphe cichoracearum* DC. On *Verbena bracteosa*, Crete (1091); on *Ambrosia artemisifolia*, Crete (1094); on *Tragopogon porrifolius*, Crete. (1099)

*Erysiphe communis* (Wallr.) Fr. On *Oenothera biennis*, Crete (1095); on *Thalictrum purpurascens*, Crete (1098); on *Amphicarpaea comosa*, Crete. (1100)

*Erysiphe galeopsidis* DC. On *Scutellaria lateriflora*, Crete. (1084); on *Stachys palustris*, Crete. (1085)

*Microsphaera elevata* Burrill. On *Catalpa speciosa*, Crete. (1115)

*Microsphaera quercina* Schw. On *Quercus macrocarpa*, Crete. (1117)

*Microsphaera russellii* Clinton. On *Oxalis stricta*, Crete. (1114)

*Uncinula circinata* Pk. On *Acer saccharinum*, Crete. (1104)

*Uncinula necator* (Schw.) Burrill. On *Vitis riparia*, Crete (1103); on *Vitis sp.* (cult'd) Crete. (1107)

*Phyllactinia suffulta* (Reb.) Sacc. On *Fraxinus viridis*, Crete. (1120)

*Sphaerotheca castagnei* Lév. On *Bidens frondosa*, Lincoln (1023), Crete (1102); on *Bidens levis*, Crete. (1113)

CLADOPHORACEÆ.

*Chaetophora pisiformis* (Roth.) Ag. Minden. (578)

ULOTRICHACEÆ.

*Conferva affinis* Kg. Lincoln. (579)

*Microspora abbreviata* (Rabh.) Lagerh. Lincoln. (580)

DESMIDIACEÆ.

*Sphaerozosma filiforme* Rabh. Minden. (581)
*Pleurotaenium nodulosum* DBy. Minden. (582)
*Cosmarium leve* Rabh. var. *septentrionale* Wolle. Minden. (583)
*Cosmarium granatum* Bréb. Minden. (584)
*Cosmarium subcrenatum* Hantzsch. Minden. (585)
*Cosmarium tinctum* Rabh. Minden. (586)
*Staurastrum crenulatum* (Delp.) Naeg. Minden. (587.)

DIATOMACEÆ.

*Navicula tabellaria* Kg. Minden. (588)
*Navicula cuspidata* Kg. Minden. (589)
*Navicula gibba* Kg. Minden. (590)
*Navicula viridula* Kg. Minden. (591)
*Navicula viridula* Kg. var. *minor* Kg. Minden. (593)
*Navicula tenela* Bréb. Minden. (592)
*Stauroneis smithii* Grun. Minden. (594)
*Pleurosigma kuetzingii* Grun. Minden. (595)
*Amphiprora alata* Ehrb. Minden. (596)
*Cymbella turgidula* A.Schm. Minden. (597)
*Amphora libyca* Ehrb. Minden. (598)
*Gomphonema olivaceum* Ehrb. Minden. (599.)
*Gomphonema lagenula* Kg. Minden. (600)
*Gomphonema intricatum* Kg. Minden. (601)
*Gomphonema parvulum* Kg. Minden. (602)
*Nitzschia coarctata* Grun. Minden. (603)
*Nitzschia gracilis* Hantzsch. Minden. (604)
*Nitzschia palea* (Kg.) W. Sm. Minden. (605)
*Suriraya saxonica* Auersw. Minden. (606)
*Suriraya spiralis* Kg. Minden. (607)
*Suriraya norvegica* Eulenst. Minden. (608)
*Suriraya euglypta* Ehrb. Minden. (609)
*Fragilaria entomon* Ehrb. Minden. (610)
*Fragilaria capucina* Rabh. Minden. (611)

*Fragilaria mutabilis* Grun. Minden. (612)
*Eunotia parallela* Ehrb. Minden. (613)
*Eunotia major* Rabh. Minden. (614)
*Cymatopleura elliptica* W.Sm. Minden. (615)

PALMELLACEÆ.

*Pediastrum tetras* (Ehrb.) Ralfs. Lincoln. (616)

BACTERIACEÆ.

*Beggiatoa arachnoidea* (Ag.) Rabh. Lincoln. (617)
*Leptothrix calcicola* Kg. Lincoln. (618)

NOSTOCACEÆ.

*Sphaerozyga smithii* Thwaites. Lincoln. (619)
*Cylindrospermum limnicola* Kg. Lincoln. (625)

OSCILLARIACEÆ.

*Oscillaria violacea* Wallr. Lincoln. (620)
*Oscillaria antliaria* Juerg. Lincoln. (621)
*Oscillaria tenerrima* Kg. Lincoln. (622)

CHROOCOCCACEÆ.

*Chroococcus rufescens* (Bréb.) Naeg. Lincoln. (623)
*Gloeocapsa arenaria* Rabh. Lincoln. (624)

UNIVERSITY OF NEBRASKA.

# BOTANICAL SURVEY OF NEBRASKA.

Conducted by the Botanical Seminar.

## III.

# REPORT FOR 1893.



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## NOTE.

The principal collections made during the year 1893 were three. Messrs. Woods and Saunders collected in the Republican valley from the Colorado line eastward, and also on the Little Blue. Mr. Rydberg spent the entire summer in the sandhill region, principally along the Dismal river. Mr. Clements spent the entire summer in northeastern Nebraska, beginning at Emerson, in Dakota county, and collecting along the Missouri and Niobrara to Meadville, in Brown county. The last two collections were made possible by the United States Department of Agriculture which undertook them jointly with the Survey.

The thanks of the Seminar are also due to Rev. J. M. Bates, of Valentine, Dr. H. Hapeman, of Minden, and to Mr. C. A. Turrell, Mr. Chas. Engberg, and Misses Cora F. Smith and Louise Lee, students in the Department of Botany at the University, for collections or additions to the reported flora.

## Additions to the Reported Flora of Nebraska Made During 1893.

*Indicates new host only.

**Phytomyxa leguminosarum* (Frank) Schroeter.
On *Falcata comosa*, Cushman. (4044)
On *Dalea dalea*, Bellevue. (3225)

*Lampropedia littoralis* (Oerst.) DeToni and Trevisan.
Stagnant water in salt marshes, Lincoln. (3380)

*Merismopedia convoluta* Breb.
South Bend. (3376)

*Scytonema cinereum* Menegh.
Lincoln. (3381)

*Scytonema hoffmanii* Ag.
Lincoln. (3382)

*Stigeoclonium tenue* Kuetz.
Lincoln. (3377)

*Hormiscia flaccida nitens* (Menegh.) Hansg.
In Greenhouse, Lincoln. (3378)

*Closterium acuminatum* Kuetz.
Lincoln. (3383)

*Closterium lanceolatum* Kuetz.
Lincoln. (3384)

*Cosmarium gottlandicum* Wittr.
Lincoln. (3385)

*Cosmarium ralfsii* Breb.
South Bend. (3386)

*Staurastrum pseudopachyrinchium* Wolle.
South Bend. (3387)

*Spirogyra grevilliana* (Hass.) Kuetz.
Lincoln. (3379)

*Spirogyra tenuissima* (Hass.) Kuetz.
Lincoln. (3390)
*Spirogyra varians* (Hass.) Kuetz.
Lincoln. (3391)
*Vaucheria aversa* Hass.
Lincoln. (3388)
*Vaucheria terrestris* Lyngb.
Minden. (3389)
*Vaucheria tuberosa* A. Br.
Saltillo. (3392)
**Peronospora parasitica* (Pers.) DeBary.
On *Roripa palustris*. Bellevue. (3108)
*Plasmopara halstedii* (Farlow) Berlese & DeToni.
On *Silphium perfoliatum*, Lincoln. (3178)
*Batrachospermum gelatinosum* (L.) Woods.
Bellevue. (3393)
*Chantransia violacea* Kuetz.
Bellevue. (3394)
**Sphaerotheca pannosa* (Wallr.) Lev.
On *Rosa multiflora* (cultivated), Lincoln. (4000)
**Erysiphe cichoracearum* DC.
On *Helianthus decapetalus*, Lincoln. (3168)
*Nitschkia tristis* (Pers.) E. & E.
On decaying branches, Saltillo. (3249)
*Fracchiaea heterogenea* Sacc.
On log, Lincoln. (3270)
*Coronophora annexa* (Nits.) Fkl.
On dead limbs, Saltillo. (3268)
*Diatrype albo-pruinosa* (Schw.) Cooke.
On dead oak limbs, Saltillo. (3269)
*Hypoxylon colliculosum* (Schw.) Berk.
On log, Cedar Bluffs. (3274)
*Hypoxylon marginatum* (Schw.) Berk.
On dead limbs, Saltillo. (3396)

*Hypoxylon stigmateum* Cooke.
On oak, Lincoln. (3271)
*Nummularia repanda* (Fr.) Nits.
On oak, Saltillo. (3275).
*Nummularia bulliardii* Tul.
On dead limbs, Saltillo. (3397)
*Chaetomium bostrichodes* Zopf.
On rotting cloth, Lincoln. (3398)
*Trichosphaeria socia* Sacc.
On dead limbs, Saltillo. (3240)
*Didymosphaeria accedens* Sacc.
On dead twigs, Saltillo. (3252)
*Amphisphaeria pseudo-umbrina* Sacc.
On *Ostrya ostrya*, Cedar Bluffs. (3239)
*Valsaria insitiva* (Cesati) De Not.
On *Gleditsia triacanthos*, Saltillo. (3242)
*Valsaria foedans* (Karst.) Sacc.
On decaying twigs, Saltillo. (3394)
*Melanomma cupularis* Clements, n.sp.
Perithecia generally forming a thin crust, sometimes scattered, superficial, globose, varying to disciform, finally cupulate, slightly roughened, black, small, 250–300 $\mu$; ostiolum inconspicuous; asci lacking; spores oblong, straight, or curved; ends obtuse, tri-septate; end cells truncate-globose, hyaline; interior cells oblong fuscous, uniguttate, 25–28x5–6 $\mu$. On stump, Saltillo. (3255)
*Pleospora saccardiana* Roum.
On *Fraxinus viridis*, Saltillo. (3243)
*Cucurbitaria kelseyi* E. & E.
On dead branches, Cedar Bluffs. (3254)
*Ophiobolus fulgidus* (C. & P.) Sacc.
On dead sunflower stalks, Saltillo. (3251)
*Gloniopsis australis* (Duby) Sacc.
On oak, Saltillo (3272)

*Hysterographium variabile* (C. & P.) Sacc.
On decorticated stump, Saltillo. (3395)

*Hysterographium mori* (Schw.) Rehm.
On twigs, Saltillo. (3399)

*Peziza rivularis* Clements, n.sp.
Sessile, carnose, explanate or slightly concave, margin strongly raised; hymenium umber, without blackish brown, minutely verrucose; asci cylindrical, not becoming blue at tip with iodine, 250x20 $\mu$; paraphyses few, hyaline, granular, 5–6 $\mu$; sporidia broadly ellipsoid, monostichous, with two large guttae (10 $\mu$ in diameter), 25–26x15–16 $\mu$.
On immersed branches in streams, Meadville. (2991)

*Discina venosa rabenhorstii* Cooke.
On wet branches, Meadville. (2990)

*Sarcoscypha coccinea* (Jacq.) Fr.
On dead limbs, Lincoln. (3226)

*Lachnea theloboloides* Alb. & Schw.
On bark, Saltillo. (3266)

*Ciboria tabacina* Ell. & Holw.
On dead limbs, Saltillo. (4153)

*Mollisia cinerea canella* Karst.
On dead limbs, South Bend. (3277)

*Mollisia stictella* Sacc. & Speg.
On bark, Saltillo. (3262)

*Trichopeziza subochracea* (C. & P.) Sacc.
On sunflower stalks, Saltillo. (3261)

*Cenangium populneum* (Pers.) Rehm.
On *Quercus rubra*, Bellevue. (2996)

*Schyzoxylon bagnisianum* Speg.
On decaying twigs, Saltillo. (2997)

*Lecanidion atratum* (Hedw.) Rabh.
On decorticated ash trees, Saltillo. (3260)

*Blitrydium megalosporum* Clements, n.sp.

Ascoma patellate, sessile, carbonaceous, black, ½ to 1½ mm.; disc black, plane, or strongly convex, margin more or less convex; asci long clavate, nearly sessile, 8-spored, 140–175x30–40 μ; spores elliptical oblong, brownish yellow, attenuated both ways but obtusely rounded at the ends, inequilateral, with 12–15 transverse septa and 5–7 longitudinal interrupted septa, becoming fenestrate muriform, distichous, not constricted, 50–72x20–25 μ; paraphyses colorless, clavate, furcate above.

On decorticated twigs of *Fraxinus viridis* Saltillo. (2998)

*Puccinia angustata* Pk.

On *Cyperus esculentus*, Kennedy. (3284)

On *Scirpus atrovirens*, Saltillo. (3296)

**Puccinia caricis* (Schum.) Rebent.

On *Cyperus houghtonii*, Thomas county. (3317)

**Puccinia helianthi* Schw.

On *Heliopsis scabra*, Bellevue. (3208)

*Puccinia lygodesmiae* E. & E.

On *Lygodesmia juncea*, Arapahoe. (2208)

**Puccinia petalostemonis* Farlow.

I. and II. on *Kuhniastera purpurea*, Lincoln. (3360, 3090)

**Puccinia silphii* Schw.

On *Silphium perfoliatum*, Lincoln. (3176)

*Puccinia porri* (Sow.) Winter.

I. on *Allium mutabile*, Lincoln. (3353)

**Puccinia pimpinellae* (Strauss) Lk.

III. on *Peucedanum foeniculaceum*, South Bend. (3352)

**Aecidium compositarum* Mart.

On *Rudbeckia angustifolia*, Lincoln. (3096)

**Aecidium clematidis* DC.

On *Clematis virginiana*, Lincoln. (3357)

**Aecidium jamesianum* Pk.

On *Asclepias tuberosa*, Lincoln. (3356)

*Aecidium phrymae* Halst.

On *Phryma leptostachya*, Thomas county. (3303)

**Aecidium oxalidis* Thuem.

On *Oxalis stricta*, Lincoln. (3363)

*Tilletia montana* E. & E.

On *Redfieldia flexuosa*, Hooker county. (4055)

*Tilletia tritici* (Bjerk.) Winter.

On wheat from the Republican valley. (3267) Spores reticulate.

*Phoma pustulata* Sacc.

On dead maple branches, Saltillo. (3136)

*Sphaeropsis gleditschiicola* Cooke.

On *Gleditsia triacanthos*, Saltillo. (3006)

*Sphaeronema longirostris* Clements, n.sp.

Perithecium innate, with a long, stout, cylindrical beak, breaking through the cortex, black, globose, cespitose 1–1½ mm. diam.; spores fusiform, elongate, slightly curved, 2-nucleate, 20x3 $\mu$.

In living branches of *Crataegus tomentosa*, Saltillo. (3337)

*Cytospora hyalosperma* Fr.

On *Acer negundo.*, Saltillo. (3008)

*Phlyctaena arcuata* Berk.

On *Datura stramonium*, Lincoln. (3014)

**Septoria verbenae* Rob.

On *Verbena bracteosa*, Cushman. (4040)

*Melanconium magnum* (Grev.) Berk.

On *Hicoria* sp., Saltillo. (3011)

*Trimmatostroma americana* Thuem.

On *Acer negundo*, Saltillo. (3012)

*Pestalozzia monorhincha* Sacc.

On *Gleditsia triacanthos*, Saltillo. (3007)

*Pestalozzia pezizoides* DeNot.

On *Vitis riparia*, Saltillo. (3003)

*Monilia penicillata* E. & E.

On rotton pine wood, Kennedy. (3334)

*Botrytis* (*Polyactis*) *doryphora* Pound & Clements, n.sp.

Mycelium white, cobwebby, at length more compact and darker; filaments greatly elongated, nearly erect, septate, sparely branched above; branches arising at right angles to filament, short, strict, with a large terminal hastate enlargement also found on short lateral branches; conidia elliptical, white, in dense capitula, 5x2½ $\mu$.

On leaves and stems of Pelargonium, Lincoln. (2498)

*Arthobotrys superba oligospora* (Fres.) Coemans.

On *Pleurotus ostreatus*, Lincoln. (3010)

*Trichothecium obovatum* (Berk.) Sacc.

On *Cucurbitaria morbosa*, Saltillo. (3002)

*Diplocladium penicillioides* Sacc.

On decaying fungi, Lincoln. (3339)

*Heterosporium didymosporum* Clements, n.sp.

Effuse, dark green; hyphae very long, flexuose, sparingly branched, fuscous, septate, 200x6 $\mu$, conidia oblong-cylindrical or obovate, rounded at both ends, rarely aculeate, olivaceous, 1, rarely 2–3–septate, strongly constricted at the septum, 20–25x10–12 $\mu$.

On decaying osage orange, Lincoln. (3335)

*Helminthosporium macrocarpum caudatum* B. & Br.

On dead limbs, Saltillo. (3005)

*Tubercularia pircuniae* Speg.

On Hickory bark, Saltillo. (4201)

*Hymenula fruticola* Pound & Clements n.sp.

Sporodochia superficial, ellipsoid or oblong, often confluent, pale reddish, farinose gelatinous, disposed in lines on the angles of the capsules; sporophore simple, rarely furcate, short, 30–45x4 $\mu$; spores ellipsoid or ovoid, spherical, hyaline, 6–8x5–6 $\mu$.

On fruits of *Salix longifolia*, Stevens Creek. (4202)

*Fusarium luteum* Clements, n.sp.

Innate or erumpent, hard, convex or plane, golden yellow hyphae short, simple, continuous; conidia falcate, curved, acute at both ends, always 3–septate, hyaline, 32–39x4–5 $\mu$.

In decaying wood, Lincoln. (4203)

*Fusarium rhizogenum* Pound & Clements, n.sp.

Mycelium superficial, 1–2 mm. in diameter, dense, convex, white, then yellow; filaments densly aggregated, ascending, septate, sparingly branched; conidia at the ends of the branches, oblong, rounded at the ends, hyaline, 1–septate, 70x4 $\mu$.

On roots of seedling apple, Lincoln. (3013)

*Phlyctospora sclerodermoides* Clements, n.sp.

Subterranean, depressed globose, nearly smooth, brown; peridium thick, coriaceous, radicate, gleba firm, chestnut colored; spores crowded, globose, brown, covered with more or less reticulate papilla which are $2\frac{1}{2}$–$3\frac{1}{2}$ $\mu$ long, involved in an indefinite hyaline mucuous, 18–25 $\mu$ in diameter.

Peridium $3\frac{1}{2}$ cm. wide by $2\frac{1}{2}$ cm. high. In cultivated soil, Lincoln. (4204)

*Lepiota spectabilis* Clements, n.sp.

Solitary; pileus carnose, membranaceous, densely covered with silky fibrillae, or pulverulent, dilutely sulphur colored, radiately striate or sulcate toward the margin, disc depressed, smooth, yellow, 5 mm. in diameter; stipe slender, strongly incrassate at the base, furnished above with an annulus with minute scales, glabrous below, concolorous; annulus straw colored, inferior, fixed; lamellae crowded, narrow, dilutely yellow, remote; spores ovoid 5–6 $\mu$ diameter, 1–guttate.

Pileus 2–$2\frac{1}{2}$ cm.; stipe 3–4 cm. long, 3 mm. wide above, 7–8 mm. below. In greenhouse, Lincoln. (3227)

*Agaricus haemorrhoidarius* Kalch.

On ground, Lincoln. (3228)

*Flammula alnicola* Fr.

On stumps, Lincoln. (4207)

*Galera striatula* Clements, n.sp.

Pileus membranaceous, campanulate, convex, silky atomaceous, soot brown, strongly striate to the umbo, umbo smooth, glabrous, brown; stipe elongate, equal, white, then rufescent, glabrous; lamellae free, remote, affixed to a collar, narrow, ochraceous rubiginous; spores ellipsoid, eguttulate, 12–15x 7–8 $\mu$.

Pileus 1½–2 cm.; stipe 9–10 cm. by 2 mm.

On moist ground, Lincoln. (3322)

*Psilocybe gillettii* Karst.

Franklin. (3159)

*Collybia loripes* Fr.

Franklin. (3258)

*Psathyrella sulcata* Clements, n.sp.

Pileus campanulate, at length convex expanded, gray, verging into black, pellucid, deeply radiately sulcate, umbo smooth, yellow; stipe smooth, shining, semi-pellucid, slender, fistulose, white above, rufescent below; lamellae adnexed, slightly ventricose, cinereous, edge black, at length everywhere brownish black; spores ovate, apiculate at one end, fuscous, or brownish purple, 8–10x5–6 $\mu$

Pileus 1–2½ cm.; stipe 4–6 cm. x 1–2 cm.

On ground, Lincoln. (4208)

*Coprinus atramentarius* (Bull.) Fr.

On ground, Kennedy. (4211)

*Coprinus picaceus* (Bull.) Fr.

On ground, Hastings. (4206)

*Coprinus velox* Godey.

On ground, Lincoln. (4209)

*Polyporus varius* Fr.

On wood, Lincoln. (4210)

*Poria contigua* Fr.
On dead limbs, Lincoln. (3344)

*Craterellus sinuosus crispus* (Fr.) Massee.
Lincoln. (3343)

*Corticium lacteum* Fr.
On bark, Lincoln. (3355)

*Corticium pellicula* Karst.
On bark, Lincoln. (3346)

*Corticium roseolum* Massee.
On wood, Lincoln. (4198)

*Coniophora umbrina* (A. & S.) Fr.
On bark, Lincoln. (3342)

*Nitella translucens* (Pers.) Ag.
York. (3370)

*Nitella translucens* form *confervoides* Thuill.
York. (3369)

*Chara crassicaulis* Schleich.
Haigler (3366, 3367), Pine Ridge. (3368)

*Chara evoluta* Allen.
Sheridan county, part of material reported as *C. foetida longibracteata* in 1892 Report. (265½)

*Chara sejuncta* A. Br.
Minden. (3365)

*Pottia truncata* Fuern.
Saltillo. (3364)

*Hypnum aduncum* Hedw.
Decatur. (3351)

*Dryopteris cristata* (L.) Gray.
South Dismal River, Hooker Co. (4101)

*Potamogeton heterophyllus* Schreb.
Kennedy. (4101)

*Potamogeton interruptus* Kit.
Thedford. (4102)

*Potamogeton perfoliatus richardsonii* Arn.
Bennet Lake, Grant county. (4103)
*Potamogeton pusillus* L.
Thedford. (4104)
*Naias guadalupensis* (Spreng.) Morong.
Whitman. (4105)
*Sagittaria arifolia* J. G. Smith in lit.
Hooker county. (4106)
*Paspalum setaceum ciliatifolium* (Michx) Vasey.
Mullen. (4107)
*Panicum dichotomum villosum* Vasey.
Plum Creek. (2913)
*Sporobulus filiformis* (Thurber) Rydberg. *S. depauperatus filiformis* Thurber, *S. gracillimus* Scribner.
Thedford. (4108)
*Poa fendleriana* (Steudel) Vasey.
Thedford. (4109)
*Scolochloa festucacea* (Willd.) Lk.
Whitman. (4110)
*Agropyrum caninum unilaterale* (Cassidy) Vasey.
Grant county. (4114)
*Hordeum pusillum* Nutt.
Thedford. (4114) Some of the Nebraska specimens named *H. nodosum* belong here—perhaps all. (Rydberg).
*Elymus macounii* Vasey.
Grant county. (4113)
*Cyperus houghtonii* Torr.
Natick. (4115)
*Carex beckii* Boott.
Long Pine. (4132)
*Carex filiformis lanuginosa* (Michx.) B.S.P.
Thedford. (4116)
*Carex limosa* L.
Kennedy. (4133)

*Carex pseudocyperus americana* Hochst.
Grant county. (4120)

*Carex scoparia* Schkur.
Thedford. (4117)

*Scirpus lacustris occidentalis* Watson.
Thomas and Hooker counties. (4121)

*Lemna gibba* L.
Plummer Ford, Thomas county. (4130)

*Lemna perpusilla* Torr.
Plummer Ford, Thomas county. (4119)

*Heteranthera dubia*, (Jacq.) Morong.
Kearney. (2998)

*Juncus alpinus insignis*, Fries.
Pishelville. (2247)

*Leptorchis loesilii* (L.) MacM.
Thedford. (4134)

*Salix cordata angustifolia* (Pursh) Anders.
Thomas and Hooker counties. (4118)

*Boehmeria cylindrica* (L.) Willd.
Halsey (4122), Fremont (3348), Pishelville (2768), Endicott, (2169)

*Polygonum litorale* Lk.
Mullen. (4136)

*Polygonum punctatum leptostachyum* (Meisn.) Small.
Thomas, Hooker, and Grant counties. (4136)

*Chenopodium rubrum* L.
Grant county. (4129)

*Salsola kali tragus* Oeder.
Aten (2646), Republican City. (2102) All localities heretofore given for *S. kali* should be transferred to the var. *tragus*. All material in the Survey Herbarium is to be referred to the variety.

*Acnida tamariscina* (Nutt.) Gray.

Thomas county. 4138. This has been confounded with *A. tuberculata* Moq. which is common in eastern Nebraska. (Rydberg.)

*Talinum calycinum* Engelm.

Specimens collected in Nebraska, probably at Fort Robinson, by Dr. Wilcox are in the National Herbarium at Washington. (Rydberg.)

*Arenaria michauxii* Hook.f.

Franklin. (2089)

*Ranunculus multifidus terrestris* Gray.

Fremont. (3349)

*Ranunculus septentrionalis* Poir.

Emerson. (2510)

*Sanguinaria canadensis* L.

Bellevue. (3116)

*Cardamine hirsuta* L.

Grand Rapids. (2851)

*Lepidium draba* L.

Wymore. (3393) Introduced.

*Crataegus coccinea* L.

Forks of Dismal River, Hooker county. (4128)

*Crataegus coccinea macracantha* Dudley.

Grand Rapids. (2850)

*Geum japonicum* Thurber.

Natick. (4123)

*Amorpha nana* Nutt.

Aten. (2653)

*Psoralea cuspidata* Pursh.

Grand Rapids. (2946)

*Euphorbia heterophylla graminifolia* (Michx.) Engelm.

Carns. (2710½)

*Euphorbia serpens* H. B. K.

Lincoln. (3375)

*Hypericum sphaerocarpum* Michx.

Richardson county, July 22, 1873. In the Aughey Collection in the herbarium of the University, labeled *Lysimachia stricta.* (Rydberg.)

*Didiplis linearis* Raf.

Lincoln. (4139)

*Ludwigia alternifolia* L.

Endicott, (2047)

*Stenosiphon virgatus* Spach.

Franklin. (2052)

*Hippurus vulgaris* L.

Whitman. (4124)

*Myriophyllum spicatum* L.

Grant county. (4131)

*Aralia nudicaulis* L.

Shaded bluffs of the Missouri throughout northeastern Nebraska. (2548)

*Sium cicutifolium* Gmelin.

Grant county. (4127)

*Foeniculum officinale* L.

Pishelville. (2754)

*Gentiana andrewsii* Griseb.

Mullen (4126), Fremont (3350), Minden.

*Asclepias jamesii* Torr.

Haigler. (2057)

*Cuscuta coryli* Eng.

On *Salix* sp., and *Aster* sp., Hooker county (4125), on *Salix longifolia*, Chelsea. (2808)

*Gilia inconspicua* Dougl.

Wabash. (3358)

*Lithospermum arvense* L.

Lincoln. (4095)

*Verbena hastata x stricta* Rydberg. (*V. paniculata x stricta* Engelm?) Hooker county. (4132)

*Agastache scrophularifolia* (Willd.) OK.
Bellevue. (3128)
*Koellia lancelata* (Pursh) OK.
Valleys of Middle Loup and South Dismal. (4133)
*Pedicularis lanceolata* Michx.
Bellevue. (3123)
*Datura tatula* L.
Thedford, escaped. (4140)
*Lobelia spicata hirtella* Gray.
Thedford (4134). Perhaps the majority of specimens of *L. spicata* reported from the state belong to this variety. (Rydberg).
*Aster junceus* Ait?
Thedford. (4139)
*Aster oblongifolius rigidulus* Gray.
Long Pine Canon. (2941)
*Aster umbellatus pubens* Gray.
Halsey. (4135)
*Helianthus petiolaris patens* (Lehm).
Grant county. (4139)
*Helianthus strumosus* L.
Long Pine. (2895)
*Coreopsis involucrata* Nutt.
Endicott. (2080)
*Bidens connata comosa* Gray,
Lomo. (2894½)
*Gaillardia aristata* Pursh.
Franklin. (2078)
*Polypteris hookeriana* Gray.
Haigler. (2064)

SUMMARY.

| | | |
|---|---|---|
| Number of species reported in Webber's Catalogue (1889) | | 1890 |
| Additions in Webber's appendix to his catalogue, (March 1892) | | 432 |
| Additions in Dr. Bessey's supplement to Webber's Appendix (June 1892) | | 170 |
| Additions in Report of the Survey for 1892 (1893) | 159 | |
| Less new hosts only | 13 | |
| | | 146 |
| Additions in this Report | 197 | |
| Less new hosts only | 15 | |
| | | 182 |
| Total number of species reported for the state | | 2820 |

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## A Revision of the Nomenclature of the Nebraska Polypetalae.

BY P. A. RYDBERG.*

Herewith I submit an attempt at a revision of the nomenclature of the reported *Polypetalae* of Nebraska. I say an attempt, as I know full well that the list is not perfect. Owing to the fact that my time has been limited and that the otherwise very good botanical library of the University lacks some of the older foreign works in which original descriptions of certain of our plants are to be found, I have not been able to do the work as I had wished. The original description of a species is especially necessary in this work, as American botanists have been in the habit of citing *nomina nuda* in the same manner in which they cite names accompanied by descriptions. Professor Greene's reprint of Fraser's catalogue has saved me from doing as Professor MacMillan has done in a number of cases in his Metaspermae of the Minnesota valley, namely, accepting *nomina nuda*.

*Read before the Seminar, February 17, 1894.

I have tried to follow as rigidly as possible the Paris Code, the Rochester Rules of the Botanical Club of the A. A. A. S., and the amendments made thereto at the Madison meeting, although I wish to record my strongest protest against one of the latter, as it introduces some most inelegant nomenclature. In work of this kind the one indispensible book is, of course, Dr. Kuntze's Revisio Generum Plantarum. This book, also, has caused the most changes in (or rather restorations of) generic names. Many corrections of the nomenclature of generic names have been made from the writings of Professor Greene and Dr. Britton; one (*Leptoglottis* for *Schrankia*) I have made myself. The sources from which I have derived corrections of specific names are too diverse to be mentioned here. The two books most often referred to and from which, perhaps, I have had the most help are Watson's Index and MacMillan's Metaspermae. At the same time I have found Professor Greene correct in stating that the former is not exact, and that the latter will be useful to "those who know how to use" it.

As a basis I have taken the sixth edition of Gray's Manual, as it is most commonly used and latest published manual, and have changed those names which do not conform to recent views. Those not changed may be regarded as in accordance with them except as to the citation of authors. In the case of our western species not given in Gray's Manual, the corrections are made from Coulter's Manual of the Rocky Mountain Region. In cases where the two books disagree and no correction is made, the name in Gray's Manual should be regarded as the correct one. Thus, Coulter has *Anemone decapetala** and the genus *Vesicaria*. Gray has *Anemone caroliniana* and *Lesquerella*. The latter two should be used.

My list contains 130 names, which is about thirty per cent of the reported *Polypetalae* of the state. Not all of these changes, however, are due to the requirements of correct nomen-

*The true *A. decapetala* may be found in the southern part of the Rocky Mountain region, but not in Nebraska. Coulter's *A. decapetala* may include both.

clature, several being required by different limitation of genera or species. It is quite likely also that some necessary changes have been overlooked, and, on the other hand, that some changes may not stand.

The first name given is the corrected name, the last one the name used in the manuals. In many cases I have found it necessary to interpolate either the binomial under which the plant was first described or such synonyms as will show the derivation of the several names.

*Pulsatilla hirsutissima* (Pursh) Britton. Contrib. Herb. Columbia Coll. 23,217 (1891), first published as *Clematis hirsutissima* Pursh. Fl. Am. Sept. 385. (1814)

*Anemone patens* var. *nuttalliana* Gray Man. Ed. 5 36. (1867)

Dr. Britton as well as the best European authorities, consider *Pulsatilla* a genus distinct from *Anemone*.

*Anemone quinquefolia* L. Spec. Pl. 541. (1753)

*Anemone nemorosa* American authors, not Linne.

*Anemone canadensis* L. Syst. Ed. 12, III., app. 231. (1768)

*Anemone pennsylvanica* L. Mant. II. 247. (1771)

*Syndesmon thalictroides* (L.) Hoffmansg. Flora XV., part II., Intell. Bl. No. IV., 34. (1832)

*Anemone thalictroides* L. Spec. Pl. 542. (1753)

*Anemonella thalictroides* Spach. Hist. Veg. VII., 240. (1839)

This plant has been referred to *Thalictrum* as well as to *Anemone*. It is generally regarded as the type of a distinct genus, and should have the older generic name—*Syndesmon*.

*Ranunculus lacustris* Beck & Tracy, Eaton's Man. Ed. 3,423. (1822)

*Ranunculus multifidus* Pursh. Fl. Am. Sept. 736 (1814), which name is preoccupied by *R. multifidus* Forskal Fl. Egypt, 102. (1755)

*Ranunculus lacustris terrestris* (Gray) Mac M., Met., Minn. Valley 247. (1892)

*Ranunculus multifidus terrestris* Gray Man. Ed. 5, 41. (1867)

*Ranunculus ovalis* Raf. Journ. Bot., 268. (1814)

*Ranunculus rhomboideus* Goldie Edinb. Phil. Journ. VI., 329. (1822)

*Ranunculus macounii* Britton Contrib. Herb. Columbia Coll. No. 30, 3. (1892)

*Ranunculus hispidus* Hook. Fl. Bor. Am. I., 19. (1830), not *R. hispidus*, Michx. Fl. N. Am. I., 321. (1803)

*Ranunculus ranunculinus* (Nutt.)

*Cyrtorrhynca ranunculina* Nutt. in Torry & Gray's Fl. N. Am. I., 26. (1838)

*Ranunculus nuttallii* Gray, Proc. Acad. Phil., 56. (1863)

*Delphinium carolinianum* Walt. Fl. Car., 155. (1788)

*Delphinium azureum* Michx. Fl. N. Am. I., 314. (1803)

*Delphinium urceolatum* Jacq. Icon. Pl. Par., I., 101. (1871), and Collect. I., 153. (1786)

*Delphinium exaltatum* Ait. Hort. Kew. II., 244. (1789)

*Leontice thalictroides* L. Spec. Pl., 312. (1753)

*Caulophyllum thalictroides* Michx. Fl. N. Am. I., 205. (1803)

Recent authors are of the opinion that our species is not different enough from the other species of *Leontice* to warrant the establishment of a separate genus.

*Castalia tuberosa* (Paine) Greene Bull, Torr. Bot. Club XV., 84. (1888)

*Nymphaea tuberosa* Paine Cat. Pl. Oneida, 184. (1864)

*Nymphaea reniformis* DC. Syst. II., 55 (1821), not *N. reniformis* Walt. Fl. Car. 155. (1788)

The genus *Castalia* was separated from *Nymphaea* by Salisbury in 1805. Ignoring this, Smith in 1808 made the genus *Nuphar*, including therein the species left in *Nymphaea* by Salisbury, and used the latter name for those species for which Salisbury founded *Castalia*. The next change must follow:

*Nymphaea advena* Solander in Ait. Hort. Kew. II., 226. (1789)
*Nuphar advena* Ait. f. Hort. Kew. III., 295. (1811)
*Neckeria aurea* (Michx.) Pfeiffer Bot. Zeit. XV., 649. (1857)
*Corydalis aurea* Willd. Enum. 740. (1809)
The genus *Neckeria* was established by Scopoli in 1777, *Corydalis* by DeCandolle in 1805.
*Neckeria aurea occidentalis* (Gray.)
*Corydalis aurea occidentalis* Gray Pl. Fend. 6. (1849)
*Neckeria micrantha* (Engelm.) MacM. Met. Minn. Vall. 255. (1892)
*Corydalis aurea micrantha* Engelm. in Gray Man. Ed. 5, 62. (1868)
*Corydalis micrantha* Gray Man. Ed. 6, 61. (1889)
*Neckeria curvisiliqua* (Gray).
*Corydalis aurea curvisiliqua* Gray, Proc. Am. Phil. 57. (1863)
*Corydalis curvisiliqua* Engelm. Gray Man. Ed. 5, 62. (1868)
*Bicuculla cucullaria* (L.)
*Fumaria cucullaria* L. Spec. Pl. 699. (1753)
*Dicentra cucullaria* DC. Syst. I., 108. (1818)
*Bicuculla* Adans. was published in 1763, *Dicentra* Bernh. in 1833.
*Biculla canadensis* (Goldie).
*Corydalis canadensis* Goldie Edin. Phil. Journ. V., 330. (1822)
*Dicentra canadensis* DC. l.c.
*Lepidium incisum* Roth Nov. Cat. I., 224 (1797–1806), not *L. incisum* M.v. Riebst. Fl. T. & C. II., 98 (1808), is, according to Dr. Kuntze, Rev. Gen. Pl. I., 35, the same as *Lepidium intermedium* Gray Pl. Wright, II., 15. (1852)
*Bursa bursa-pastoris* (L.)
*Thlaspi bursa-pastoris* L. Spec. Pl. 647. (1753)
*Capsella bursa-pastoris* Moench. Meth. 271.
This is a good illustration of what a strict following of the rules of the Botanical Club of the A. A. A. S. will lead to. *Bursa-pastoris* is the oldest specific name. It is agreed generally that the species should not be included in the genus

*Thlaspi*, and the oldest generic name after 1753 is *Bursa*, used by Wiggers in 1780. *Capsella* Med. appeared first in 1792. *Bursa* must therefore be the generic name, and *bursa-pastoris* the specific name. The amendment to the Rochester rules made at Madison in striking out a part of § III. was, in my opinion, not a wise one. The nomenclature which results is often, to say the least, inelegant and uncouth. *Apios apios* and *Phragmites phragmites* are in plain English comparable to "dog dog" or "cat cat." *Bursa bursa-pastoris* translated is "Shepherd's purse purse."

*Lesquerella argentea* (Pursh) MacM. Met. Minn. Vall. 263. (1892)

*Myagrum argenteum* Pursh Pl. Am. 434. (1814)

*Alyssum ludovicianum* Nutt. Gen. II., 63. (1818)

*Lesquerella ludoviciana* Wats. Proc. Am. Acad. A. S. XXIII., 254. (1888)

*Coulterina didymocarpa* (Hook.) OK. Rev. Gen. I., 431. (1891)

*Vesicaria didymocarpa* Hook. Fl. Bor. Am. I., 48. (1833)

*Physaria didymocarpa* Gray, Gen. I., 162. (1848)

The name *Physaria* cannot be used as there is a genus *Physarium* Persoon (1795) among the fungi which is far older.

*Roripa nasturtium* (L.) Rusby Mem. Torr. Bot. Club III., no 3, 5. (1893)

*Sisymbrium nasturtium* L. Spec. Pl. II., 657. (1753)

*Nasturtium officinale* R. Br. Hort. Kew. Ed. 2, IV., 110. (1812)

*Roripa* Scopoli was published in 1760; *Nasturtium* Robert Brown in 1812.

*Roripa palustris* (L.) Greene Man. Bay Reg. Bot. 21. (1894)

*Sisymbrium palustre* L. Spec. Pl. 657. (1753)

*Nasturtium palustre* DC. Syst. II., 191. (1821)

*Roripa palustris hispida* (Desv.)
*Brachylobus hispidus* Desv. Journ. III., 183. (1814)
*Nasturtium palustre hispidum* Fisch. & Mey. Ind. Sem. Petr. III., 41. (1838)

*Roripa obtusa* (Nutt.)
*Nasturtium obtusum* Nutt. T. & Gr. Fl. I., 74. (1838)

*Roripa sessiliflora* (Nutt.)
*Nasturtium sessiliflorum* Nutt. T. & Gr. Fl. I., 73. (1838)

*Roripa curvisiliqua* (Nutt.)
*Nasturtium curvisiliqua* Nutt. l.c.

*Roripa sinuata* (Nutt.)
*Nasturtium sinuatum* Nutt. l.c.

*Roripa armoracia* (L.)
*Cochlearia armoracia* L. Spec. Pl. 648. (1753)
*Nasturtium armoracia* Fries Fl. Scand. (1835)

*Sisymbrium pinnatum* (Walt.) Greene Bull. Cal. Acad. II. (1887)
*Erysimum pinnatum* Walt. Fl. Car. 174. (1788)
*Sisymbrium canescens* Nutt. Gen. II., 71. (1818)

*Stanleya pinnata* (Pursh.)
*Cleoma pinnata* Pursh Fl. Am. 739. (1814)
*Stanleya pinnatifida* Nutt. Gen. II., 71. (1818)

*Arabis brachycarpa* (Torr. & Gr.)
*Turritis brachycarpa* Torr. & Gr. Fl. I., 79. (1838)
*Arabis drummondii* Gray Man. Ed. 5, 69. (1868) not Graham.
*Arabis confinis* Wats. Proc. Am. Acad. A. & S. XXII., 466. (1887)

*Arabis glabra* (L.) Weinman Cat. Dorp. 18. (1810)
*Turritis glabra* L. Spec. Pl. 666. (1753)
*Arabis perfoliata* Lam. Dict. I., 219.

*Cardamine laciniata* (Muhl.) Wood Bot. and Flor. 38. (1861)
*Dentaria laciniata* Muhl. in Willd. Sp. Pl. III., 479. (1800)
*Dentaria* is included in *Cardamine* by the best authorities.

*Jacksonia trifoliata* Raf. Med. Rep. 352. (1808)
*Cleome dodecandra* Michx. Fl. Am. II., 32. (1803) not Linne.
*Polanisia graveolens* Raf. Journ. Phys. 98. (1819)
*Jacksonia trachysperma* (Torr. & Gr.) Greene Pittonia II., 175. (1891)
*Polanisia trachysperma* Torr. & Gr. Fl. I., 122. (1838)
*Cleome serrulata* Pursh. Fl. Am. 441. (1814)
*Cleome integrifolia* T. & G. Fl. I., 122. (1838)
*Helianthemum majus* (L.) B. S. P. Cat., N. Y. (1888)
*Lechea major* L. Spec. Pl. 90. (1753)
*Helianthemum canadense* Michx. Fl. Am. Bor. I., 308. (1803)
*Viola palmata obliqua* (Hill) Hitchcock Fl. Ames 487. (1891)
*Viola obliqua* Hill Hort. Kew. 316. (1768)
*Viola cucullata* Ait. Hort. Kew. III., 288. (1789)
*Viola palmata cucullata* Gray Bot. Gaz. XI., 254. (1386)
*Agrostemma githago* L. Spec. Pl. 435. (1753)
*Lychnis githago* Lam. Encyc. III., 643.
This is now generally held distinct from *Lychnis*.
*Arenaria franklinii hookeri* (Nutt.)
*Arenaria hookeri* Nutt. in T. & Gr. Fl. I., 178. (1838)
*Arenaria franklinii minor* Hook. & Arn. Bot. Beachy, 326. (1841)
*Anychia canadensis* (L.) B. S. P. Cat., N. Y. (1888)
*Queria canadensis* L. Spec. Pl., 90. (1753)
*Queria capillacea* Nutt. Gen. I., 159. (1818)
*Anychia capillacea* DC. Prodr. III., 369. (1828)
*Elodes virginica* (L.) Nutt. Gen. II., 17. (1818)
*Hypericum virginicum* L. Spec. Pl. Ed. 2, 1104. (1761)
*Hypericum campanulatum* Walt. Fl. Car., 191. (1788)
*Elodes campanulata* Pursh Fl., 379. (1814)
*Hibiscus laevis* Scop. Del. Flor. III., 35. (1788)
*Hibiscus militaris* Cav. Diss., 352. (1790)
*Abutilon abutilon* (L.)
*Sida abutilon* L. Spec. Pl., 685: (1753)
*Abutilon avicennae* Gaertn. Fr. II., 251. (1800)

*Malveopsis coccinea* (Nutt.) OK. Rev. Gen., 72. (1891)
*Malva coccinea* Nutt. Fraser's Cat. (1813)
*Malvastrum coccineum* Gray Pl. Fend., 21. (1849)
*Malveopsis* Presl. was published in 1844; *Malvastrum* Gray in 1849.

*Impatiens biflora* Walt. Fl. Car., 219. (1788)
*Impatiens fulva* Nutt. Gen. I., 146. (1818)

*Parthenocissus quinquefolia* (L.) Planchon Monogr. Ampelid. I., 488. (1887)
*Hedera quinquefolia* L. Spec. Pl., 292. (1753)
*Ampelopsis quinquefolia* Michx. Fl. I., 160. (1803)
According to Planchon the name *Ampelopsis* belongs to the genus *Cissus* of Gray's Manuel Ed. 6. No true *Cissus* Linne is found in the region of the manual.

*Vitis americana* Marsh.
*Vitis vinifera americana* Marsh. Arb. 166. (1785)
*Vitis aestivalis* Michx. Fl. II., 230. (1803)

*Acer saccharinum* L. Spec. Pl. 1055. (1753)
*Acer dasycarpum* Ehrh. Beitr. IV., 24.
The sugar maple, *A. Saccharinum* Wang., which does not grow in Nebraska, becomes *A. saccharum* Marsh.

*Acer negundo* L. Spec. Pl. 266. (1753)
*Negundo aceroides* Moench. Meth. 334.

*Rhus radicans* L. Spec. Pl. 266. (1753)
*Rhus toxicodendron* L. Spec. Pl. l. c.
Both are published on the same page, but *R. radicans* first.

*Rhus trilobata* Nutt. in Torr. & Gr. Fl. N. A. I., 219. (1838)
*Rhus canadensis trilobata* Gray Man. Ed. 6, 119. (1889)
This is a good species.

*Lotus americanus* (Nutt.) Bisch. Hort. Heid. (1839)
*Trigonella americana* Nutt. Gen. II., 120. (1818)
*Hosackia purshiana* Benth. in Bot. Reg. 1257.
This must be included in the genus *Lotus*. The oldest name is *Lotus sericeus* Pursh (1814), which, however, is preoccupied by *Lotus sericeus* DC. Cat. Mons. (1813)

*Medicago arabica* (L.)

*Medicago polymorpha e. arabica* L. Spec. Pl. 280. (1753)

*Medicago maculata* Willd. Sp. Pl. 1412. (1800)

As the plant is not a native of Arabia, Willdenow thought the name inappropriate. Hence the change.

*Psoralea digitata* Nutt. Torr. & Gray Fl. N. A. I., 300. (1838)

*Psoralea campestris* Nutt. l. c.

The latter is only a form of the former, and scarcely deserved a varietal name.

*Amorpha nana* Nutt. Fraser's Cat. (1813)

*Amorpha microphylla* Pursh Fl. 466. (1814)

There has been an idea generally prevailing that the *A. nana* of Fraser's Catalogue and that of Nuttall's Genera are not the same. The causes of this idea seem to have been that Dr. Gray found in Lambert's Herbarium under this name a variety of *A. fruticosa* (var. *angustifolia* Pursh), and that the same variety has been cultivated in England and figured in the botanical magazines under this name. Mr. Fraser was a nurseryman, not a botanist, and Fraser's Catalogue is known to have been prepared by Nuttall. It may be that Fraser had both *A. nana* and *A. fruticosa angustifolia* in the nursery and a mistake of labels was made or a mistake might even have been made when the plants were shipped from America to England. It is evident enough that the *A. nana* of Fraser's Catalogue and that of Nuttall's Genera are the same; first, because the descriptions agree perfectly; second, because *A. nana* in Fraser's catalogue is said to be "collected near the Mandan towns 1,600 miles up the Missouri," which is, as far as I know, far outside of the range of *A. fruticosa angustifolia*, but about the center of that of *A. microphylla* Pursh; third, because Nuttall in his Genera expressly says "*A. nana* T. N. (Thomas Nuttall) in Fraser's Catal. 1813," and also says that it is the same as

*A. microphylla* Pursh II., 466. Which should be regarded as the strongest evidence—specimens found in a foreign herbarium and plants sent out from a foreign nursery on the one hand, or on the other the author's own words in print, strenghthened by those of Pursh, who states that his *A. microphylla* is the same as *A. nana* of Fraser's Catalogue? The *A. nana* of Fraser's *nursery* may be whatever it please.

*Dalea dalea* (L.) Mac M. Torr. Bull. XIX. (1892)

*Psoralea dalea* L. Spec. Pl., 764. (1753)

*Dalea alepecuroides* Willd. Spec. Pl. III., 1336. (1803)

*Dalea eneneandra* Nutt. Fraser's Cat. (1813)

*Dalea laxiflora* Pursh Fl. 741. (1814)

*Kuhniastera compacta* (Spreng.) OK. Rev. Gen., 192. (1891)

*Dalea compacta* Spreng. Syst., 327. (1826)

*Petalostemon macrostachyus* Torr. Ann. Lyc., N. Y., 176. (1828)

*Kuhniastera* Lam. was founded in 1789, *Petalostemon* Michx. in 1803.

*Kuhniastera purpurea* (Vent.) Mac M. Met. Minn. Vall., 329. (1892)

*Dalea purpurea* Vent. Hort. Cels., 40. (1800)

*Petalostemon violaceus* Michx. Fl. II., 50. (1803)

*Kuhniastera candida* (Michx.) OK. Rev. Gen. 192. (1891)

*Petalostemon candidus* Michx. Fl. II., 49. (1803)

*Kuhniastera multiflora* (Nutt.) OK. l.c.

*Petalostemon multiflorus* Nutt. in Journ. Acad. Philad. VII., 92.

*Kuhniastera villosa* (Nutt.) OK. l.c.

*Petalostemon villosus* Nutt. Gen. II., 85. (1818)

*Astragalus ceramicus* Sheldon Minn. Bot. Stud. No. 9, 19. (1894)

*Phaca picta* Gray Pl. Fend. 37. (1849)

*Astragalus pictus* Gray Proc. Am. Acad. VI., 214 (1866), not *A. pictus* Steud. (1840), nor *A. pictus* Boiss (1853).

*Astragalus ceramicus longifolius* (Pursh)

*Psoralea longifolia* Pursh Fl. Am. Sept. II., 741. (1814), not *A. longifolius* Lam. Enc. Meth. I., 322. (1783)

The name *longifolius*, which is the first specific name, can not be used as a specific name in the genus *Astragalus*, but may well be used as a varietal name under *A. ceramicus*. In fact it is the only one to be permitted. Mr. Sheldon in naming the varieties *A. ceramicus jonesii* and *A. ceramicus imperfectus* violated articles 57 and 58 of the Paris Code.

*Astragalus carolinianus* L. Spec. Pl. 757. (1753)

*Astragalus canadensis* L. l.c., but lower on the page.

*Astragalus crassicarpus* Nutt. Fraser's Cat. (1813)

*Astragalus caryocarpus* Ker. Bot. Reg. II., 174. (1816)

*Astragalus viridis* (Nutt.)

*Kentrophyta montana* Nutt. Torr. & Gray Fl. I., 353. (1838), not *A. montanus* L.

*Kentrophyta viridis* Nutt. l.c.

*Astragalus kentrophyta* Gray Proc. Am. Phil., 60. (1863)

*Astragalus gilviflorus* Sheldon Minn. Bot. Stud. No. 9, 21. (1894)

*Astragalus triphyllus* Pursh Fl Am. Sept. II., 740 (1814), not *A. triphyllus* Pallas Astr., 68. (1800)

This species has received two other names, but neither can be used in the genus *Astragalus*.

*Astragalus spatulatus* Sheldon Minn. Bot. Stud. No. 9, 22. (1894)

*Homalobus caespitosus* Nutt. in Torr. & Gray Fl. N. A. I., 352. (1838)

*Astragalus caespitosus* Gray Proc. Am. Acad. VI., 230 (1864) not *A. caespitosus* Pallas Astr. 70. (1800)

This species has received two other names, both preoccupied.

*Spiesia lambertii* Pursh OK. Rev. Gen. I., 207. (1891)

*Oxytropis lambertii* Pursh Fl. 740. (1814)

*Spiesia* Necker was founded in 1790, *Oxytropis* DC. in 1802.

*Spiesia lambertii sericea* (Nutt.)
*Oxytropis sericea* Nutt. Torr. & Gray Fl. I., 339. (1838)
*Oxytropis lambertii sericea* Gray Coult. Man. 71. (1885)

*Spiesia multiceps* (Nutt.) OK. l.c.
*Oxytropis multiceps* Nutt. Torr. & Gray Fl. I., 341. (1838)

*Spiesia inflata* (Hook.)
*Oxytropis arctica inflata* Hook. Fl. Bor. Am. I., 146. (1833)
*Oxytropis podocarpa* Gray Proc. Am. Acad. VI., 234. (1863)

*Meibomia canadensis* (L.) OK. Rev. Gen. I., 195. (1891)
*Hedysarum canadense* L. Spec. Pl., 749. (1753)
*Desmodium canadense* DC. Prodr. II., 328. (1825)
*Meibomia* was used by Fabricius in 1763, *Desmodium* Desv. was established in 1813.

*Meibomia canescens* (L.) OK. l.c.
*Hedysarum canescens* L. Spec. Pl. 748. (1753)
*Desmodium canescens* DC. Prodr. II., 328. (1825)

*Meibomia grandiflora* (Walt.) OK. l.c., 196.
*Hedysarum grandiflorum* Walt. Fl. Car., 185. (1788)
*Hedysarum acuminatum* Michx. Fl. II., 72. (1803)
*Desmodium acuminatum* DC. Prodr. II., 329. (1825)

*Meibomia dillenii* (Darlingt ) OK. l.c., 195.
*Desmodium dillenii* Darlington Fl. Cestr. 414. (1837)

*Meibomia rigida* Ell. OK. l.c., 198.
*Hedysarum paniculatum* L. Spec. Pl., 749. (1753)
*Desmodium paniculatum* DC. Prodr. II., 329. (1825).

*Meibomia illinoensis* (Gray) OK. l.c.
*Desmodium illinoense* Gray Proc. Am. Acad. VIII., 289. (1870)

*Lespedeza frutescens* (Willd.) Ell. Sk., 206. (1824)
*Hedysarum frutescens* Willd. Sp. Pl. III., 1193. (1802)
*Lespedeza capitata* Michx. Fl. Am. II., 71. (1803)

*Lathyrus decaphyllus* Pursh Fl. Am., 471. (1841)
*Lathyrus polymorphus* Nutt. Gen. II., 96. (1818)

*Falcata comosa* (L.) OK. Rev. Gen. I., 182. (1891)
*Glycine comosa* L. Spec. Pl., 754. (1753)
*Glycine monoica* L. Spec. Pl. Ed. 2, 1023. (1761)
*Amphicarpaea monoica* Nutt. Gen. II., 113. (1818)
*Falcata* Gmelin was established in 1791, *Amphicarpa* Ell. in September, 1818. The latter was changed into *Amphicarpaea* by DeCandolle in 1825. The two latter names are also antedated by *Amphicarpum* Raf. (January, 1818). which is something else.

*Falcata pitcheri* (T. & Gr.) OK. l.c.
*Amphicarpaea pitcheri* T. & Gr. Fl. N. A., I., 292. (1838)

*Apios apios* (L.) McM. Bull. Torr. Bot. Club XIX. (1892)
*Glycine apios* L. Spec. Pl. 753. (1753)
*Apios tuberosa* Moench Meth. 165. (1794)

*Phaseolus polystachyus* (L.) B. S. P. Cat. N. Y. (1888)
*Dolichos polystachyus* L. Spec. Pl. 726. (1753)
*Phaseolus perennis* Walt. Fl. Car. 182. (1788)

*Gymnocladus dioicus* (L.) Koch Dendr. I., 5. (1869)
*Guilandina dioica* L. Spec. Pl. 381. (1753)
*Gymnocladus canadensis* Lam. Dict. I., 33. (1783)

*Acuania illinoensis* (Michx.) OK. Rev. Gen. I., 158. (1891)
*Mimosa illinoensis* Michx. Fl. II., 254. (1803)
*Acacia brachyloba* Willd. Sp. Pl. VI., 1071. (1805)
*Desmanthus brachylobus* Benth. Hook. Journ. Bot. VI., 358,

*Leptoglottis intsia* (Walt.)
*Mimosa intsia* Walt. Fl. Car. 252. (1788)
*Schrankia uncinata* Willd. Spec. Pl. IV., 1042. (1805)
*Leptoglottis nuttallii* DC. Mem. Leg. 451. (125)
The genus *Schrankia* of Willdenow (1805) is antedated by *Schrankia* Med. Uster. N. Annal. I., 42, and used by Moench in Meth. 263 (1794). As the name *Schrankia* cannot be used, the only available generic name is *Leptoglottis* DC., although the generic characters given are not good.

*Opulaster opulifolius* (L.) OK. Rev. Gen. 949. (1891)

*Spiraea opulifolia* L. Spec. Pl. 489. (1753)

*Physocarpus opulifolius* Maxim.

*Opulaster* Med. was established on this species in 1799, *Physocarpus* Camp. as a section of Spiraea in 1824.

*Rosa virginiana* Miller Dict. (1768)

*Rosa blanda* Ait. Hort. Kew. II., 202. (1789)

*Rosa virginiana arkansana* (Porter) MacM. Met. Minn. Vall. 304. (1892).

*Rosa arkansana* Porter Fl. Col. 38. (1874)

*Fragaria vesca americana* Porter Bull. Torr. Bot. Club XVII., 15. (1890)

*Fragaria vesca* Auct. Am., not Linne.

The American variety differs somewhat from the European, especially in its thinner and smoother leaves, but I do not think sufficiently to justify a new species. Dr. Britton in Bull. Torr Bot. Club 1892, page 222, makes of it a species and points out as a distinctive character that the achenes are superficial, "which are scarcely or not at all imbedded in the ovoid fruit." But so they are in the European *F. vesca.* DeCandolle and other European botanists use this very character to distinguish *F. vesca* from *F. elatior* and *F. virginiana.*

*Geum canadense* Jacq. Hort. Vind. II., 82. (1772)

Not *Geum canadense* Murr. Con. Goett. V., 34. (1790)

*Geum album* Gmelin Syst. II., 861. (1791)

*Potentilla gracilis chrysantha* (Lehm.)

*Potentilla chrysantha* Lehm. Hook. Fl. Bor. Am. I., 193. (1833), not *P. chrysantha* Trev., which is older.

*Potentilla rigida* Nutt. Journ. Acad. Philad. VII., 20 (1833) Not *P. rigida* Wall., which is older.

*Potentilla gracilis rigida* Wats. Rev. Potentilla 557.

If this is to be regarded as a variety of *P. gracilis*, which I believe it should, the varietal name must be *chrysantha.*

But if it should be raised to the rank of a species, its name must be *P. nuttallii* Lehm Ind. Sem. h. Hand. Add. 12 (1852), as the other two are not available as specific names.

*Sanguisorba sanguisorba* (L.)
*Poterium sanguisorba* L. Spec. Pl. 994. (1753)
The two genera are now united, even by Dr. Gray. But he chose the latter name. *Sanguisorba* is found on page 116 of the Species Plantarum, *Poterium* on page 994.

*Agrimonia striata* Michx. Fl. Am. I., 287. (1803)
*Agrimonia eupatoria* Auct. Am.
Dr. Britton in Bull. Torr. Bot. Club XVIII., 367 (1891) has pointed out that our common *Agrimonia* is not the *A. eupatoria* of Europe.

*Pirus coronaria iowensis* Wood Class Book Rev. Ed., 333. (1868)
*Pirus iowensis* Bailey Am. Garden XII., 473. (1891)
*Pirus coronaria* L. of Gray's Manual, as far as Nebraska and other western specimens are concerned.

*Crataegus mollis* (T. & Gr.) Scheele Linnaea XXI., 569. (1847)
*Crataegus subvillosa* Torr. P. R. Rep. IV., 86. (1856)
*Crataegus coccinea mollis* T. & Gr. Fl. I., 465. (1838)
This is generally accepted as a good species.

*Ribes rubrum albinervium* (Michx.) Mac M. Met. Minn. Vall., 279. (1892)
*Ribes albinervium* Michx. Fl. I., 110. (1803)
*Ribes rubrum subglandulosum* Maxim Bull. Acad. Pet. 19, 261. (1878)

*Myriophyllum pinnatum* (Walt.) B. S. P. Cat., N. Y. (1888)
*Potamogeton pinnatum* Walt. Fl Car., 90. (1788)
*Myriophyllum scabratum* Michx. Fl. II., 190. (1803)

*Callitriche palustris* L. Spec. Pl., 4. (1753)
*Callitriche verna* L. Spec. Pl. Ed. 2, 6. (1761)

*Oenothera albicaulis* Pursh Fl., 733 (1814), not *O. albicaulis* Nutt. Gen. (1818)

*Oenothera pinnatifida* Nutt. Gen. I., 245. (1818)

As *O. albicaulis* Nutt. in Fraser's catalogue is but a *nomen nudum*, it has no standing. Hence *O. albicaulis* Pursh is the first published species bearing that name, which should be restored, though apt to cause some confusion.

*Oenothera pallida* Lindl. Bot. Reg. 14 t. 1142. (1830)

*Oenothera albicaulis* Nutt. Gen. I., 245 (1818), which name is preoccupied by the foregoing.

*Epilobium angustifolium* L. Spec. Pl. 347 (1753) not Lam.

*Epilobium spicatum* Lam. Fl. Franc. 1077. (1778)

This is corrected in Gray's manual, but not in Coulter's. Dr. Trelease in his revision of *Epilobium* changes it back to *E. spicatum*, as he believes, as did Lamarck, that *E. angustifolium* L. is the same as *E. dodonei* Vill. It would have been strange if Linne had regarded this as the typical *E. angustifolium*, as the species is comparatively rare in Europe and not found at all in the native land of Linne. What is most common in Sweden is a narrower leaved form of *E. angustifolium* L., *E. spicatum* Lam. This is Linne's *E. angustifolium* a. It grades into the broader leaved form which is common here, Linne's *E. angustifolium* b, *E. angustifolium latum DC.* in Prodr. Linne's *E. angustifolium* c is *E. dodonei* Vill. and *E. angustifolium* Lam.

*Mentzelia decapetala* (Pursh).

*Bartonia decapetala* Pursh in Sims Bot. Mag. t 1487 (between 1810 and 1813)

*Bartonia ornata* Pursh Fl. 327. (1814)

*Mentzelia ornata* T. & Gr. Fl.

*Cactus viviparus* Nutt. Gen. I., 295. (1818)

*Mamillaria vivipara* Haw. Syn. Pl. Succ. Supp. 72.

*Cactus mamillaris*, the type of the genus *Mamillaria*, Haw., is the first of the two species in Linne's Species Plantarum

belonging to that section of the genus *Cactus* L. which has been regarded by Linne and others as representing the typical cacti. The name *Cactus* should therefore be retained for this group. The name *Mamillaria* Haw. is also, according to Dr. Kuntze, antedated by *Mamillaria* Stackh. (1809)

*Cactus missouriensis* (Sweet) OK. Rev. Gen. I., 259. (1891)

*Mamillaria missouriensis* Sweet Hort. Brit. 171. (1827)

*Micrampelis lobata* (Michx.) Greene Pittonia II., 128. (1890)

*Sicyos lobata* Michx. Fl. II., 217. (1803)

*Micrampelis echinata* Raf. Med. Repos. N. Y. V., 352. (1808)

*Echinocystis lobata* T. & Gr. Fl. N. A. I., 542. (1838)

*Micrampelis* was established some thirty-two years before *Echinocystis.*

*Osmorrhiza claytonii* (Michx.) B. S. P. Cat. N. Y. (1888)

*Myrrhis claytonii* Michx. Fl. I., 170. (1803)

*Osmorrhiza brevistylis* DC. Prodr. IV., 232. (1830)

*Osmorrhiza aristata* (Thunb.)

*Chaerophyllum aristatum* Thunb. Fl. Japon. 119. (1784)

*Osmorrhiza longistylis* DC. l.c.

*Adorium tenuifolium* (Nutt.) OK. Rev. Gen. 264. (1891)

*Musenium tenuifolium* Nutt. in Torr. & Gray Fl. I., 642. (1840)

*Adorium* Raf. was published in 1825, *Musenium* T. & Gr. in 1840.

*Adorium divaricatum* (Pursh).

*Sesili divaricatum* Pursh Fl. 732. (1814)

*Musenium divaricatum* Nutt. l.c. (1840)

Dr. Kuntze writes *A. lucidum*, his name being based on *Sesili lucidum* Nutt. in Fraser's Catalogue, which is a mere *nomen nudum.*

*Peucedanum graveolens* Wats. King's Rep. V., 128. (1871)

*Peucedanum kingii* Wats. Proc. Am. Acad. XXII., 474. (1887)

J. B. Davy, in Erythea II., 48 (1894), points out that Bentham & Hooker in Gen. Pl. I., 919 (1867), did not give *Anethmum graveolens* L. the name *Peucedanum graveolens*, but only indicated that it should be included in that genus. The name *Peucedanum graveolens* was given to the latter species by Baillon, Hist. d. Pl. VII., 97 (1880), some nine years later than the publication of *P. graveolens* Watson.

*Cymopterus acaulis* (Pursh)

*Selinum acaule* Pursh Fl. 732. (1814)

*Thapsia glomerata* Nutt. Gen. I., 184. (1818)

*Cymopterus glomeratus* Raf. Journ. Phys. 100. (1819)

*Sanicula canadensis* L. Spec. Pl. 235. (1753)

*Sanicula marilandica canadensis* Torr. Fl. U. S. 302. (1829)

As *S. canadensis* and *S. marilandica* are both on the same page of the Species Plantarum, but *S. canadensis* is first, the latter must keep its name. If one is to be regarded as a variety of the other, as it generally is, *S. marilandica* must take the place of variety; hence

*Sanicula canadensis marilandica* (L.)

*Sanicula marilandica* L. Spec. Pl., 235. (1753)

*Deeringia canadensis* (L.) OK. Rev. Gen., 266. (1891)

*Sison canadense* L. Spec. Pl., 252. (1753)

*Cryptotaenia canadensis* DC. Mem. Umb., 42. (1829)

*Deeringia* Adanson was published in 1763, *Cryptotaenia* DC. in 1829.

*Berula erecta* (Huds.) Coville Bot. Death Vall. Exp., 115. (1893)

*Sium erectum* Hudson Fl. Aug., 103. (1762)

*Berula angustifolia* Koch in Mert. & Koch Deut. Fl. II., 455. (1826)

*Cicuta virosa maculata* Coulter & Rose Rev. N. A. Umbel., 130. (1888)

*Cicuta maculata* L. Spec. Pl., 256. (1753)

This is reduced to a variety by Coulter and Rose.

*Cornus candidissima* Marsh. Arb., 35. (1785)

*Cornus stricta* Lam. Dict. II., 116 (1786) and

*Cornus paniculata* L'Her. Corn. 9 t. 5. (1788)

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## A Preliminary List of the Botanical Expeditions in Nebraska, 1803–1893.

BY FREDERICK E. CLEMENTS.

The object of the subjoined list is to furnish easy and ready reference to botanical field work done within Nebraska as now bounded, and also to aid in the survey of the state by showing in what region work has already been done and by affording some hint as to the nature and extent of this work, the disposition of collections, etc. The present list does not pretend to completeness by any means. It simply purports to be a fairly full and accurate resume of the present status of our knowledge on this subject and is published partly for reasons given above and partly in the hope of obtaining further information through outside channels. This preliminary list is intended merely to catalogue such botanical excursions as have assumed the proportions of expeditions and is in no degree a measure of all the field work done in the state.

I. Lewis, Meriwether, and Clark, William. (1803–1806)

Along the Missouri river from the southeast corner of the state to the mouth of the Niobrara, with short excursions into the state. Collections made on the outward journey lost; those made on the return identified by Frederick Pursh and new species described in his Flora Americae Septentrionalis. (1814)

II. NUTTALL, Thomas, and BRADBURY, John. (1808)
General route, up the Missouri; collected in Nebraska at the mouth of the Platte, Council Bluffs (old Council Bluffs on the Nebraska side), Blackbird, and the lower valley of the L'Eau qui Court.
Collection in possession of the Academy of Natural Sciences of Philadelphia. Descriptions of new species in Fraser's Catalogue (1813) and Nuttall's Genera of North American Plants. (1818)

III. NICOLLET, I. N. (1838–39)
Along the Missouri river with extensive excursions into the eastern part of the state. Collections made by Charles Geyer and identified by Dr. John Torrey. List in Nicollet's Report (1843); collection preserved in the Herbarium of Columbia College, New York.

IV. FREMONT, John C. (1842–44)
(1842) Entered Nebraska at about the point where the Little Blue leaves the state, followed up that river to its head, came upon the Platte at Kearney, and followed the South Platte out of the state.
Extensive collections throughout the valley of the Little Blue and of the Platte; identified by Dr. John Torrey; some descriptions published in Torrey & Gray's Flora of North America, and list published in Fremont's Report (1845); preserved in the Herbarium of Columbia College, New York.
(1844) Passed through the southwest corner of the state along the Republican. Greater part of the collections lost.

V. STANSBURY, Howard. (1849)
Entered the state in the southeast corner, followed the Little Blue, reached the Platte at Kearney, and followed the North Platte out of the state.
Collections identified by Dr. John Torrey, in the Herbarium of Columbia College; list in Stansbury's report. (1855)

VI. WARREN, Gouverneur K. (1855–57)

(1855) From the Middle Keya Paha nearly due south through the Loup valley to Ft. Kearney. A mere military reconnoisance without important botanical results.

(1856–57) From Sioux City southwestward through the Elkhorn valley, thence northwest through the Loup valley to Ft. Laramie. Return through the Niobrara valley to the Missouri.

Collections mostly identified by Dr. George Engelmann preserved in the Engelmann Herbarium at St. Louis. List in Warren's Report. (1858)

VII. BESSEY, Charles E. (1887)

Along F. E. & M. V. R. R. from Long Pine to Ft. Robinson. List in Webber's Catalogue. (1890) Collection in the Herbarium of the University of Nebraska.

VIII. BESSEY, Charles E. (1889)

Followed survey of route of B. & M. R. R. from Alliance to Pine Ridge. List in Webber's Catalogue. Collection in the Herbarium of the University of Nebraska.

IX. SMITH, Jared G. (1889)

From Alliance to Camp Clarke. Collection in the Survey Herbarium.

X. WEBBER, Herbert J. (1889)

In valley of the Dismal river. List in Webber's Catalogue. Collection in the Survey Herbarium.

XI. WEBBER, Herbert J. (1889)

Along the bluffs of the Missouri from Rulo to Nebraska City. List in Webber's Catalogue. Collection in the Survey Herbarium.

XII. WILLIAMS, Thomas A. (1891)

In Hat Creek basin and the White River valley. Collection in Mr. Williams' herbarium, a few specimens in the Survey Herbarium. Additions published in Webber's Appendix. (1892)

XIII. RYDBERG, Per A.

From Kearney along B. & M. R. R. to the Colorado line; thence along Lodge Pole creek and the South Platte to Wyoming. Collections in the National Herbarium at Washington and in the Survey Herbarium. Additions published in Webber's Appendix (1892), and Dr. Bessey's Supplement. (1892)

XIV. WOODS, Albert F. (1892)

Hat Creek basin. Collection in the Survey Herbarium. List in Report of the Survey for 1892.

XV. SMITH, Jared G., and POUND, Roscoe. (1892)

From Alliance to O'Neill through the sand hills and lake region; thence to Columbus. Collection in the Survey Herbarium. List in report of the survey for 1892.

XVI. RYDBERG, Per A. (1893)

Sand hills of central Nebraska and Dismal River valley. Collections in the National Herbarium at Washington and in the Survey Herbarium. Additions published in this report.

XVII. WOODS, Albert F., and SAUNDERS, DeAlton. (1893)

From Haigler to Superior along the Republican, thence to Endicott and Fairbury on the Little Blue. Collection in the Survey Herbarium. Additions published in this report.

XVIII. CLEMENTS, Frederick E. (1893)

From Emerson along the Missouri and Niobrara to Western Brown county. Collections in the National Herbarium at Washington and in the Survey Herbarium. Additions published in this report.

In addition, mention should be made of the collections made by Rev. J. M. Bates along the Elkhorn and Niobrara between Ewing and Ft. Robinson, and by Dr. H. Hapeman in Kearney and Adams counties.

## Bibliography of the Flora of Nebraska.

BY ROSCOE POUND.

The following list contains such books or articles as deal with the flora of Nebraska or with the flora of localities within the state, and such other articles as have to do with collections made in Nebraska, or describe new species from the state, or are otherwise of local interest.

A few words seem to be required with reference to Professor Aughey's Catalogue and his sketches of the Flora of Nebraska, enumerated below, as they have deceived many persons in times past. In the catalogue he enumerates 2,034 species, of which 1,671 are Anthophytes, 49 Pteridophytes, 163 Bryophytes, 90 Algæ, and 61 Lichens. No fungi are catalogued. Elsewhere he states that 2,043 species are known to exist in Nebraska. These, however, are only estimates. Professor Aughey was primarily a geologist. His heart was in geological work, and the bulk of what time he had after the labors of the class room was devoted to it. His herbarium is now in the Herbarium of the University and shows what he actually accomplished as regards the flora of the state. It consists of about 500 specimens, representing less than 200 species, all Anthophytes or Pteridophytes, and almost all from the south-eastern portion of the state. Very few, therefore, of the species reported in the catalogue are represented, and a comparison has shown (as was noted by Mr. Webber in the introduction to his catalogue) that the list was based almost entirely upon the range of species as given in other books. In other words, its purpose evidently was to inform the collectors of the state of what they might expect to find in its borders. At that early day, with the manifold duties of his chair, then undivided, with no adequate library facilities, few helpers, and a large unexplored region before him, perhaps nothing more could

be expected. At any rate it must be said that subsequent researches have failed to confirm his estimates, and that, though some of the eastern plants he listed are now beginning to make their way into the state at a distance of nearly twenty years, his catalogue is substantially unreliable. It seems necessary to say this because many species are to be found cited as occurring in Nebraska by writers who have depended on his catalogue, which in fact have never been collected in the state.

**Aughey, Samuel.** Catalogue of the Flora of Nebraska 1875.

Sketches in the Physical Geography and Geology of Nebraska (1880). [Contains: chapter VII. General Flora of Nebraska; VIII. Forest Trees and Shrubs of Nebraska with Notes on their Distribution; IX. The Wild Fruits of Nebraska; X. Wild Grasses.]

See **Curley.**

**Bates, J. M.** The Grasses of Northwestern Nebraska. In Report of the Botanist in Rep. Nebr. St. Board of Agr. 1891. (1892)

**Bell, A. T.** The Slime Moulds (*Myxomycetes*) of Crete. In Publ. Nebr. Acad. Sci. II. (1892)

**Berkeley, M. J.** Notices of North American Fungi. Grevillea, 1876, pp. 93 and 141. [Describes two new black fungi from Nebraska, collected by Hayden. No. 881, and No. 969.]

**Bessey, C. E.** *Ruppia maritima* L. in Nebraska. Am. Nat., 1886, p. 1052.

Grasses and Forage Plants of Nebraska. In Rep. Nebr. St. Agr. Soc., 1886. (1887)

The Eastward Extension of *Pinus ponderosa* Dougl. var. *scopulornm.* Am. Nat., 1887, p. 927.

The Westward Extension of the Black Walnut. Ibid., p. 928.

The Grass-Flora of the Nebraska Plains Am. Nat., 1888, p. 171.

Grasses and Forage Plants of Nebraska. Second Report. In Rep. Nebr. St. Board Agr., 1887. (1888).

Natural Horticultural Regions of Nebraska. In Rep. Nebr. St. Hort. Soc., 1887–8. (1888) [Gives a list of the trees and woody plants of the state and their distribution.]

A few notable weeds of the Nebraska Plains. Am. Nat., December, 1888.

Report on the Grasses and Forage Plants of Nebraska. In Rep. Nebr. St. Board of Agr., 1888. (1889)

Two Big-rooted Plants of the Plains. Am. Nat., 1889, p. 174.

The Flora of the Upper Niobrara. Am. Nat., 1889, p. 537.

Report of the Botanist on the Grasses and Forage Plants of Nebraska. In Rep. Nebr. St. Board of Agr., 1889. (1890) [Contains: Grasses of Central Nebraska by H. J. Webber; Grasses of Northwestern Nebraska, by H. J. Webber; Grasses of Box Butte and Cheyenne counties, by J. G. Smith; List of Grasses Exhibited at State Fair, 1888, showing the distribution of many species.]

The Bearberry in Central Nebraska. Am. Nat., 1891, p. 1130.

The Native Trees of Nebraska. In Nebraska Farmer, 1891, page 537. [Gives a list with distribution.]

The Native Shrubs of Nebraska. In Nebraska Farmer 1891, p. 590. [List with distribution.]

Preliminary Report on the Native Trees and Shrubs of Nebraska. Bull Agr. Exp. Sta., Nebr., Vol. IV, No. 4. (1891)

Sixth Annual Report of the Botanist. In Rep. Nebr. St. Board Agr., 1891. Also in Contrib. Bot. Dept. Univ. Neb., n. s., II. (1892) [Contains: Grasses Exhibited at State Fair, 1891, showing distribution; List of Weeds of Nebraska; Preliminary List of the Grasses of Nebraska; Grasses of Northwestern Nebraska, by J. M. Bates; Grasses of Southwestern Nebraska.]

Second Edition of Webber's Appendix to the Catalogue of the Flora of Nebraska, with a Supplementary List of Recently Reported Species. In Contrib. Bot. Dept., Univ. Neb., n. s., III. (1892)

Second Report upon the Native Trees and Shrubs of Nebraska. In Rep. Neb. Hort. Soc., 1892. Also in Contrib. Bot. Dept. Univ. Neb., n. s., I. (1892)

Seventh Annual Report of the Botanist. In Rep. Neb. St. Board Agr., 1892. Also in Contrib. Bot. Dept. Univ. Neb. n. s., V. (1893) [Contains: List of Weeds of Nebraska; List of Grasses Exhibited at the State Fair, 1892, showing distribution; Preliminary Description of the Native and Introduced Grasses of Nebraska.]

**Botanical Survey of Nebraska.**—Report on Collections Made in 1892. (1893) [Contains Flora of the Sand Hill Region of Sheridan and Cherry Counties, and List of Plants Collected on a Journey Through the Sand Hills in July and August, 1892, by J. G. Smith and Roscoe Pound; Notes on the Canyon Flora of Sioux County, with List of Plants Collected in July and August, 1892, by A. F. Woods; Miscellaneous Additions to the Flora of the State and New or Noteworthy Species from Various Localities.]

**Coulter, John M.** Manual of the Botany (*Phaenogamia* and *Pteridophyta*) of the Rocky Mountain Region, from New Mexico to the British Boundary. 1885. [Covers western Nebraska to the hundredth meridian.]

**Curley, Edwin A.** Nebraska: its Advantages, Resources, and Drawbacks, 1876. [Contains chapter XXIV., The Wild Fruits of Nebraska, by S. Aughey, in which is also a sketch of the "General Botany of Nebraska."]

**Ellis, J. B., and Everhart, B. M.** New Species of Fungi from Various Localities. Journ. Myc. IV., 97. (1888)

New Species of Hyphomycetous Fungi. Journ. Myc. V., 68. (1889)

New and Rare Species of North American Fungi. Journ. Myc. V., 145. (1889)

New Species of Fungi from Various Localities. In Proc. Acad. Nat. Sci. Philad., 1891. [In each of the foregoing articles new species from Nebraska are described.]

**Fremont, John C.** Report of the Exploring Expedition to the Rocky Mountains in the Year 1842, and to Oregon and North California in the Years 1843–44. (1845) [Contains: Catalogue of Plants Collected by Lieutenant Fremont in his Expedition to the Rocky Mountains. By John Torrey.]

**Gray, Asa.** Manual of the Botany of Northern United States, Including the District East of the Mississippi and North of North Carolina and Tennessee. Sixth Edition Revised and Extended Westward to the Hundredth Meridian by Sereno Watson and John M. Coulter, 1890. [This edition (sixth) connects with Coulter's Manual and includes the Flora of eastern and central Nebraska.]

**Morgan, A. P.** The Genus *Geaster*. Am. Nat., 1887, p. 1026. [Describes two new species from Nebraska.]

**Nicollet, I. N.** Report Intended to Illustrate a Map of the Hydrographical Basin of the Upper Mississippi River, 1843. [Contains: Catalogue of Plants Collected by Mr. Charles Geyer, under the Direction of Mr. I. N. Nicollet, During his Exploration of the Region Between the Mississippi and Missouri Rivers, by Professor John Torrey, M.D. (appendix B.)]

**Pound, Roscoe.** Notes on Fungi of Economic Interest Observed in Lancaster County During the Summer of 1889. In Bull. of Agr. Exp. St. Nebr., Vol. I., No. 11, 1889.

**Rydberg, P. A.** Flora of the High Nebraska Plains. Am. Nat. 1891, p. 485.

On the American Black Cottonwood. In Bull. Torr. Bot. Club XX., No. 2. (1893) [Describes a new cottonwood from Nebraska.]

**Schofield, J. R.** Notes on the Flora on the Artesian Well. In Publ. Nebr. Acad. Sci., II. (1892) [Gives a list of Algæ found in the artesian well at Lincoln.]

**Smith, J. G.** Some Nebraska Grasses. Bot. Gaz., 1889, p. 231.

The Grasses of Box Butte and Cheyenne counties. In Rep. Nebr. St. Board of Agr., 1889. (1890) Also in Am. Nat., 1890, p. 181.

Grasses of the Sand Hills of Northern Nebraska. In Rep. Nebr. St. Board of Agr., 1892. (1893) Also in Contrib. Bot. Dept. Univ. Nebr., n. s. V.

**Stansbury, Howard.** Exploration and Survey of the Valley of Great Salt Lake of Utah, Including a Reconnoisance of a New Route Through the Rocky Mountains. 1853. [Pages 18–52 relate to Nebraska and its prairie flora.]

**Swezey, G. D.** Nebraska Flowering Plants. Doane College Nat. Hist. Studies, 1. 1891. [List and notes].

Additions to the Flora of Nebraska. In Publ. Nebr. Acad. Sci., II. 1892. Also in Bull. Torrey, Bot. Club, 1892, p. 94.

**Torrey, John.** See Fremont, Nicollet.

**Warren, G. K.** Report on Explorations in Nebraska in 1855–56–57. In Report of the Secretary of War, 1858. [Botany by F. V. Hayden, at page 726.]

**Watson, Sereno.** *Pentsiemon haydeni.* Bot. Gaz., 1891, p. 311. [Notes the rediscovery of this species in Nebraska.]

**Williams, T. A.** Notes on Nebraska Lichens. Am. Nat., March, 1889.

Notes on the Canyon Flora of Northwest Nebraska. Am. Nat., 1890, p. 779.

**Webber, H. J.** A Preliminary Enumeration of the Rusts and Smuts of Nebraska. In Bull. Agr. Exp. Stn. Nebr., Vol. I., No. 11, 1889. [Introduction by Dr. C. E. Bessey.]

The Fresh Water Algæ of the Plains. Am. Nat., 1889, p. 1011.

The Flora of Central Nebraska. Am. Nat., 1889, p. 633, 1890, p. 76.

The Grasses of Central Nebraska. In Rep. Neb. St. Board Agr., 1889. (1890)

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UNIVERSITY OF NEBRASKA.

# BOTANICAL SURVEY OF NEBRASKA.

**Conducted by the Botanical Seminar.**

# IV.

# Report on Collections Made in 1894-95.



LINCOLN, NEBRASKA, U. S. A.
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## CONTENTS.

## NOTE.

The large number of new species of fungi collected in 1894 delayed the publication so long that we have been able to include in this report a portion of the collections made in 1895. This report is given over entirely to recording additions to our flora, and to descriptions of fungi, the space being fully occupied by them. Work upon the distribution of species of anthophytes in the state is rapidly approaching completion, but is not yet ripe for publication.

The Seminar is indebted to Rev. J. M. Bates, Dr. H. Hapeman, and Messrs. C. L. Shear, M. E. Moore, J. A Warren, and C. C. Engberg for collections. Many others have assisted by sending single specimens. Thanks are due also to Dr. N. L. Britton of Columbia College, New York, for advice and information as to nomenclature.

The list of *Anthophyta* was prepared by P. A. Rydberg, the algae, except *Bacillariaceae* by D. A. Saunders, the *Bacillariaceae* by C. J. Elmore, the fungi by Roscoe Pound and Frederick E. Clements.

From the amount of material already on hand and undetermined, we feel justified in prophesying a total of four thousand species in the next two years.

CHARLES E. BESSEY,
ROSCOE POUND,
FREDERICK E. CLEMENTS,
*Editorial Committee.*

December 23, 1895.

## NEW SPECIES OF FUNGI.

In the following descriptions of new species, Saccardo's Chromotaxia has been faithfully followed. All color-names conform to his charts and to the synonymic lists on p. 6ff.

### MUCORACEAE.

*Thamnidium* (*Helicostylum*) *cyaneum* Pound and Clements.

Terminal sporangium, sporangiophore, and lateral branches as in *T. glomeratum;* sporangiola borne on the lateral branches, numerous, 30–50, globose or pear-shaped, nodding on deflexed stalks 100x3–5 $\mu$, without columella, steel-blue, 35–45 $\mu$ in diam., 15–35-spored; spores ellipsoid or ovate, smooth, blue, in age pale blue, 12–15x8–10 $\mu$.

On horse-dung, with *Piptocephalis*, and *Circinella*, Lincoln. (4493)

### SPHAERIOIDEAE.

*Cytospora celastri* Clements.

Perithecia innate, densely aggregated, globulose, ostiole short, erumpent, shorter than the perithecium; spore-masses linear, flexuose-contorted, golden-yellow; conidia hyaline, strongly curved, often semi-circular, obtuse, or acute, 15–20x1 $\mu$.

In dead stems of *Celastrus scandens*, Otowanie Woods. (4742)

### MUCEDINACEAE.

*Rhinotrichum doliolum* Pound and Clements.

Effused, white, compact, velvety, gray, or drab; sporophore ascending, much branched; filaments hyaline, tortuous, many septate, 5 $\mu$ wide, thickly beset with bottle-shaped basidia, 7–8x3–4 $\mu$, generally opposite, rarely alternate;

conidia 2-several on each basidium, borne on short sterigmata, hyaline, ovoid-ellipsoid, 3–5x2–3 $\mu$.

Forming a thick crust on the sporangia and stipes of a slime-mould, bluffs of the Missouri river, Bellevue. (4381)

*Mycogone roseola* Pound and Clements.

Broadly effused, covering the entire host with a layer 300–500 $\mu$ thick, at first white, then rosy, or, rarely, pale brick-red; hyphae hyaline, septate, erect, branched, 3–4 $\mu$ wide; conidia borne on short, lateral, often nodding pedicels, 2-celled, 20x15 $\mu$, superior locule larger, densely and beautifully echinulate, globose, pale brick-red, 12–15 $\mu$, inferior locule almost hyaline, or very pale rosy, minutely and sparingly punctulate, 8–9 $\mu$.

Parasitic on an *Helvella, H. albipes* (?), Meadville, Keya Paha county. (4743)

DEMATIACEAE.

*Helminthosporium phragmidium* Pound and Clements.

Broadly effused, velutinous, at first white, then exactly avellaneous, 1 cm. wide; sporophore very long, with numerous alternately-disposed, lateral branches, multiseptate, hyaline, 160–300x2½–5 $\mu$; conidia solitary, erect, obclavate, smooth, pale gray, constricted between the septa, 3–7-septate, 45–70x10–15 $\mu$.

On fragments of wood in the green-house, Lincoln. (4576)

*Sporodesmium suffultum* Pound and Clements.

Cespitula gregarious, superficial, granular, botryoid, black; sterile hyphae creeping, fuliginous, branched, torulose; sporophore erect, unicellular, broad, turgid, hyaline, equalling the conidia in diameter, 25–35x15–20 $\mu$; conidia densely congested, globose, or globose-oblong, rarely oblong, opaque, brown-fuscous, irregularly and densely polygono-areolate, or nearly radiately septate, very rarely muriform, 25–35x25 $\mu$.

On decorticated branches of *Populus monilifera*, Memphis. (4578)

STILBACEAE.

**Trichurus** Clements and Shear nov. gen.

As in *Stysanus*, but the capitulum densely beset with long, strict bristles.

*Trichurus cylindricus* Clements and Shear.

Solitary or gregarious; stipe simple, or sometimes two arising from the black base, attenuate above within the capitulum, strict, erect, broad, glabrous, black, opaque, composed of indistinct hyphae $2\frac{1}{2}$ $\mu$ wide, $\frac{1}{6}$–$2\frac{1}{2}$ mm. long, 35–85 $\mu$ thick; capitula elongate, linear or clavate-cylindrical, equal, or sometimes attenuate towards the apex, gray-fuscous, $\frac{3}{4}$–$2\frac{1}{2}$ mm. long, 18–30 $\mu$ thick, densely beset with acute, rectilinear, fuscous, few-septate, simple, or rarely 2-3-furcate bristles, 60–120x2 $\mu$; hyphae brownish-fuscous, short, pseudo-verticillately, or ramosely branched; conidia catenulate, oblong-elliptical, smooth, slightly glaucous, 8–9x3 $\mu$.

On decaying seeds of *Cucurbita maxima*, in the laboratory, Lincoln. (4744)

TUBERCULARIACEAE.

*Fusarium hymenula* Pound and Clements.

Sporodochia minute, $\frac{1}{10}$–$\frac{1}{6}$mm., gregarious, orbicular, or oblong, disciform, without white-tomentose, within at first dilutely amber-colored, then black, margin slightly elevated, flexuous, white; sporophore long, 2–4–verticillately branched, branches short, ascending, or erect, appressed, 35–40x2 $\mu$; conidia oblong, wider toward either end, simple, rounded, straight, hyaline, 10–12x3–4 $\mu$.

On dead leaves of *Heliathus*, Wabash. An *Hymenula*, with verticillately-branched sporophore. (4258)

*Volutella gilva albo-pilosa* Pound and Clements.

On dead leaves of *Ulmus fulva*, Weeping Water. (4546)

According to Sacc. Fung. Ital., Fig. 728, the specimens in the Survey collection are specifically distinct from *V. gilva*. In Syll. Fung., Saccardo unites with *V. gilva V. intricata* Karst., from which the specimens in hand differ only in the atro-olivaceous, or nearly black sporodochium, covered by the longer, inextricably interwoven, white hairs.

HELVELLACEAE.

*Helvella grisea* Clements.

Pileus appressed, persistently bilobed, or sub-reniform, scarcely inflated, reticulated beneath with numerous anastomosing veins, pallid, hymenium pale brownish-gray; stipe concolorous, or scarcely paler, glabrous, at first longitudinally sulcate, then strongly lacunose-sulcate; asci cylindrical, 8-spored, 200–250x15 $\mu$; sporidia broadly elliptical, monostichous, 1-guttate, 18x10 $\mu$; paraphyses filiform, septate, hyaline, 4 $\mu$ wide.

Pileus 1–2 cm. high, 1–2½ cm. wide; stipe 1½–3 cm. x 4–5 mm.

On the ground, with *Conocephalus conicus*, Hazel Creek canyons, Brown county. Related to *H. palustris* Peck, and to *H. palescens* Schaeff., but distinguished by the color and the persistently saddle-shaped pileus.

*Helvella sulcata minor* Clements.

Pileus 2–3 mm., rarely 8 mm. wide, 2–5 mm. high; stipe 2–3 mm., rarely 10 mm. high, 1½–3½ mm. wide; sporidia 15x10 $\mu$.

On shady ground, Otowanie Woods, Lancaster county.

PEZIZACEAE.

*Peziza brunneo-vinosa* Clements.

Ascomata caespitose, sessile, at first cupuliform, at length applanate, often exactly disciform and immarginate, mar-

gin irregular, hardly lobed, 5–12 mm. in diameter; hymenium deep brown-wine-color, beneath paler, or orchraceous; asci cylindrical, not turning blue with iodine, 250–300x12–14 $\mu$; sporidia ellipsoid, smooth, 2-guttate, 16–20x10 $\mu$; paraphyses broadly linear, septate, fuliginous above.

On sand in canyons of the Niobrara river, Keya Paha counties.

*Peziza paraphysata* Clements.

Ascoma orbicular, applanate, margin deflexed, carnose, beneath fusco-ochraceous, hymenium chestnut-colored, 1–2 cm. in diameter; asci cylindrical, 8-spored, elongate, not turning blue with iodine, 325–350x18 $\mu$; sporidia broadly ellipsoid, obliquely monostichous, 2-guttate, smooth, 20x15 $\mu$; paraphyses septate, broadly clavate above, densely filled with brown granules, 5 $\mu$ wide, clavate apex 50–60 $\mu$, long by 10–12½ $\mu$ wide.

On the ground and on fragments of wood, Meadville, Keya Paha county. Closely related to *Discina orbicularis* Peck.

*Peziza* (*Plicaria*) *vinacea* Clements.

Ascoma concave, or scutellate, at length applanate, carnose, sessile, margin repand-flexuous, surface of the hymenium uneven, at first orange-vinous, then vinous-brick-colored, beneath even, glabrous, paler, 7–15 mm. in diam.; asci cylindrical, 8-spored, trunculate, turning blue throughout with iodine, 225–250x12–13 $\mu$; sporidia elliptical, eguttulate, monostichous, hyaline, smooth, 16–20x10–12 $\mu$; paraphyses broadly filiform, scarcely incrassate at the apex, granular, 5 $\mu$ wide.

On damp ground in shady woods, Wabash.

*Galactinia viridi-tincta* Clements.

Ascoma hemispherical, cupulate, sessile, milky, without grayish-tomentose, or minutely verrucose, light-olivaceous,

hymenium brownish-olivaceous, flesh turning green when wounded, milk grayish-green, 5–10 mm. wide; asci cylindrical, turning blue with iodine, 250–300x12–14 $\mu$; sporidia ellipsoid, 1–2-guttate, irregularly disposed, smooth, 15x18 $\mu$; paraphyses linear, scarcely, or not at all, incrassate, multiseptae, hyaline, 5–7 $\mu$ wide.

On shady ground, Otowanie Woods, Lancaster county.

*Barlaea constellatio minuta* Clements.

Ascomata generally immarginate, convex, aurantiaceous, rarely reddening with age, $\frac{1}{3}$–$\frac{1}{2}$ mm., rarely as much as 1 mm., in diam.

On wet ground, Rock Creek, Keya Paha county.

*Humaria clausa* Clements.

Ascomata caespitose, carnose, subglobose, or nearly hemispherical, mouth somewhat hysteriform, gaping slightly, pruinulose, drab, $\frac{3}{4}$–2 mm., wide; asci clavate, 8-spored, 250x35 $\mu$; sporidia large, oblong, smooth, hyaline, eguttulate, 32–37x12$\frac{1}{2}$–16$\mu$; paraphyses densely packed, filiform, scarcely incrassate above.

On moist ground, Otowanie Woods, Lancaster county.

*Humaria phycophila* Clements.

Ascomata very minute, sessile, scutellate, at length convex, gregarious, margin entire; hymenium incarnate, or miniate-aurantiaceous, paler without, 300–500$\mu$ in diam.; asci clavate-cylindrical, obliquely operculate, 8-spored, not turning blue with iodine, 60–67x9–15$\mu$; sporidia elliptical, obliquely monostichous, or often distichous, slightly truncate at both ends, generally 1-guttate, smooth, hyaline, 10–11, rarely 12$\frac{1}{2}$, by 6–7$\frac{1}{2}$ $\mu$; paraphyses filiform, furcate above, stuffed with orange granules, strongly recurved at the apex, 1–2 $\mu$ in diam.

Among filaments of *Lyngbya* on moist ground, Beatrice. A true *Humaria*, though in some degree related to *Ascophanus*.

*Humaria subcrenulata* Clements.

Ascoma carnose, with a very short, thick, hypogaeous stipe, at first globose, then hemispherical, or sometimes almost concave, margin slightly incurved, subcrenulate, ochroleucous, or ochraceous, 2–5 mm. wide; asci narrowly cylindrical, stipitate, 200x10$\mu$; sporidia ellipsoid, hyaline, smooth, eguttulate, 12½–15x8–10 $\mu$; paraphyses scarcely equalling the asci, filiform, septate, granular, 3 $\mu$ wide.

Among mosses on sandy ground, Rock Creek, Keya Paha county; canyons of Hazel Creek, Brown county.

*Humaria tofacea* Clements.

Ascoma sessile, carnose, concave, naked, grayish-drab, scarcely margined, or the margin strongly depressed, 2–3 cm. wide; asci cylindrical, not turning blue with iodine, 200x10–12 $\mu$; sporidia ellipsoid, smooth, eguttulate, monostichous, 15x8–9 $\mu$; paraphyses filiform, 2½ $\mu$ wide.

On fragments of the wood of *Pinus ponderosa*, canyons of the Niobrara river, Keya Paha county.

*Sarcoscypha roseo-tincta* Clements.

Ascomata caespitose, cupuliform, at length often concave, carnose, without beautifully papillate-tomentose, with densely agglutinated cells, 20–25 $\mu$ in diam., white, margin tomentose-ciliate-crenate, sordescent in age; hymenium creamy-ochraceous; stipe broad, rarely 1–3-lacunose, tomentose-papillate, expanded above into the cup, rosy, or rosy-tinged; asci cylindrical, 8-spored, not turning blue with iodine, 125x8–10 $\mu$; sporidia ellipsoid, hyaline, monostichous, 2-guttate, 10x5 $\mu$; paraphyses linear, stuffed with 1–2-seriate oil-drops above, 2½ $\mu$ wide.

On horse-dung, Otowanie Woods, Lancaster county.

**Sepultaria** Cooke Myc. 259, 1879, *Lachnea* Fr. Syst. Myc. 2:77, 1822; not *Lachnaea* L. Sp. Pl. Ed. I., 560, 1753 (*Lachnea* Sp. Pl. Ed. II., 514). Fries cites *Lachnum* Retz. Flor. Scand. Prod. 329, 1797, as a synonym of *Lachnea*. *Lach-*

*num agaricinum* Retz., however, is *Dasyscypha virginea* (Batsch) Fckl.; hence *Lachnum* Retz. must stand for the Friesian genus *Dasyscypha*. In consequence, *Sepultaria* Cooke is the oldest admissible name, for *Lachnea* Fr. Kuntze, Rev. Gen. Pl. 868 takes up *Scutellinia* Cooke, in accordance with his rule of species-majority, a principle not sanctioned by American botanists.

*Sepultaria* (*Eusepultaria*) *aspera* Clements.

Ascoma broadly cupulate, partly subterranean, waxy-carnose, covered with short, thick, flexuous, smoky-brown, 3–6-celled hairs, 80–200x12–15 $\mu$, chestnut-colored, margin irregularly 3–4-lobed; hymenium bay-chestnut-colored; asci cylindrical, not turning blue with iodine, 200x12½–15 $\mu$; sporidia fusoid-elliptical, 2–3 guttate, hyaline, monostichous, very prominently tuberculate-verrucose, 25x12½ $\mu$; paraphyses entirely fusco-olivaceous, clavulate, 7–8 $\mu$ wide.

Ascoma 3 cm. high, 2 cm. wide.

On shady ground, bluffs of the Missouri river, Bellevue. Related to *S. fusicarpa* (Ger.) Cooke, but easily distinguished by the lobed margin, sparse hairs, and tuberculate spores.

*Sepultaria* (*Eusepultaria*) *aurantia* Clements.

Ascoma subhypogaeous, hemispherical-cupulate, without fuscous-brown, densely covered with very long, septate, concolorous hairs, 500–600x10 $\mu$; hymenium bright orange, 5–7 mm. wide; asci narrowly cylindrical, long-stipitate, not turning blue with iodine, 250x8–10 $\mu$; sporidia ellipsoid, smooth, monostichous, 1–guttate, 16–18x8–9 $\mu$; paraphyses filiform, filled with orange granules, 2½ $\mu$ wide.

On the ground among dead leaves, bluffs of the Missouri river, Bellevue. Related to *S. lapidaria* Cooke; the form and color of the cup are that of *S. hemisphaerica* (Wigg.) Cooke.

*Sepultaria* (*Eusepultaria*) *grisea* Clements.

Ascomata subterranean, gregarious, often crowded, hemispherical-cupulate, without sparsely covered with septate, flexuous hairs, pale brown, or isabel-colored below, hyaline toward the apex, 150–400x6–7 $\mu$, brown-ochraceous, hymenium gray, 3–4 mm. wide; asci broadly cylindrical, 8-spored, 200x15–20 $\mu$; sporidia ellipsoid, smooth, 1–2-guttate, monostichous, 20–25x12½–15 $\mu$; paraphyses gradually but strongly clavate, 7–8 $\mu$ wide above.

Among mosses on wet sand, Rock Creek canyon, Keya Paha county.

*Sepultaria* (*Scutellinia*) *bryophila* Clements.

Ascomata gregarious, hemispherical, then deeply scutellate, margin and external surface furnished with septate, brown, obtuse or acuminate hairs, 250–400x8–10 $\mu$, hymenium concave, gray, with a pale but distinct rosy tint, 1–2 mm. wide; asci cylindrical, 8-spored, 250–300x12–14 $\mu$; sporidia elliptical, hyaline, smooth, minutely 2-guttulate, 16–20x10–12 $\mu$; paraphyses guttulate, filiform, 3–4 $\mu$ wide.

On sandy ground among mosses, Rock Creek Canyon, Keya Paha county. Related to *Sepultaria cretea* (Cooke).

*Sepultaria* (*Scutellinia*) *pediseta* Clements.

Ascomata gregarious, or caespitose, at first hemispherical, scarcely open, then scutellate, without tomentose-tuberculate, the tubercules pale yellow, composed of agglutinated cells 20–25 $\mu$ in diam.; bristles sparse, very long, strict, strongly attenuate, pale brown, 9–10-septate, 450–500x18 $\mu$ at the base, 5 $\mu$ at the apex, arising singly from the tubercules; hymenium bright orange, paler without, 3–5 mm. in diam.; asci cylindrical, not turning blue with iodine, 175x10 $\mu$; sporidia ellipsoid, smooth, monostichous, 15x8 $\mu$; paraphyses scarcely broader above, 5 $\mu$ wide at the apex, slightly green-tinted.

On horse dung, Otowanie Woods, Lancaster county. Related to *S. dalmeniensis* (Cooke).

*Sepultaria* (*Scutellinia*) *pseudocrenulata* Clements.

Ascomata deeply concave, carnose; hymenium exactly drab, paler without, furnished with short, septate, nearly hyaline hairs, 80–100 $\mu$ long, margin crenulate with fasciculate hairs, 5 mm. wide; asci cylindrical, 8-spored, 200–225x 12–15 $\mu$; sporidia ellipsoid, smooth, hyaline, monostichous, 18x10 $\mu$; paraphyses filiform, scarcely incrassate above.

On rich, shady ground among filaments of *Lyngbya*, Otowanie Woods, Lancaster county. Related to *S. laxmanni* (Weinm).

*Sepultaria* (*Scutellinia*) *punicea* Clements.

Ascomata subgregarious, superficial, or slightly innate, at first hemispherical, closed, then narrowly open, mouth densely beset with bristles, without furnished with very dense, brown, septate, acute bristles, 300–400x16–20 $\mu$; hymenium bright miniate, $\frac{1}{2}$–2 mm. in diam.; asci cylindrical, 225–230x10–14 $\mu$; sporidia elliptical, smooth, hyaline, monostichous, 10–12x7–9 $\mu$; paraphyses filiform-clavulate, densely filled with orange granules.

On wet, decaying wood, bluffs of the Missouri River, Otoe county.

*Sepultaria* (*Scutellinia*) *pygmaea* Clements.

Ascomata very minute, $\frac{1}{2}$–$\frac{3}{4}$ mm., rarely 1 mm. in diam., gregarious, carnose, scutellate; hymenium gray or fuscous, margin and external surface furnished with very strict brown, septate, acute, or often truncate hairs, 175–250x12$\frac{1}{2}$ $\mu$; asci cylindrical, 125–150x9–10 $\mu$; sporidia ellipsoid, smooth, 12x7 $\mu$; paraphyses exceptionally numerous, filiform.

On rich ground among filaments of *Lyngbya*, Otowanie woods, Lancaster county. Related to *S. bryophila*.

*Sepultaria* (*Scutellinia*) *rubro-purpurea* Clements.

Ascomata at first urceolate, then cupulate, very rarely somewhat scutellate, without brownish-fuliginous, very densely covered with rigid, concolorous, many-septate hairs, rounded at the apex, 150–200x8–10 $\mu$, margin scarcely distinctly ciliate, hymenium bright red-purple, 3–5 mm. in diam.; asci cylindrical, turning bright green with iodine, 250x15–18 $\mu$; sporidia ellipsoid, verrucose, 2-guttate, monostichous, 23–25x12$\frac{1}{2}$ $\mu$; paraphyses septate, red-purple, 3–4 $\mu$ wide, abruptly incrassate above, 7 $\mu$ wide.

On the sandy banks of a brook, Hazel Creek Canyons, Brown county. Related to *S. cubensis* (Berk.).

*Pseudohelotium isabellinum* Clements.

Ascoma cupulate, stipitate, margin thick, often flexuous; hymenium concave, isabel-colored, or pale fulvous, paler beneath, puberulent with short hairs, 25–40x8–10 $\mu$, $\frac{1}{2}$–2 mm. in diam.; stipe short, $\frac{1}{3}$–$\frac{1}{2}$ mm.; asci cylindrical, not turning blue with iodine, 75–95x6–7 $\mu$, sporida oblong, monostichous, 7–12$\frac{1}{2}$x5 $\mu$; paraphyses densely filled with large oil-drops.

On wet twigs, Rock Creek, Keya Paha county.

*Mollisia lilacina* Clements.

Ascomata gregarious, sessile, disciform, lilac or pale livid, testaceous when dry, paler beneath, margin elevated, white-crenulate, $\frac{1}{3}$–1 mm. in diam.; asci small, clavate, stipitate, 30–40x3–4 $\mu$; sporidia cylindrical, straight or curved, 1–3-guttate, or spuriously septate, distichous or monostichous, 7–10x1$\frac{1}{2}$–2 $\mu$; paraphyses cylindrical, granular, 2 $\mu$ wide.

On bark of *Ulmus americana*, Wabash; on decaying twigs, Bellevue, Beatrice, Nebraska City.

*Trichopeziza candida* Clements.

Ascomata caespitose, sessile, waxy, tenacious, broadly infundibuliform, or scutellate, pure white within and with-

out, disk becoming cinereous in age, exterior very densely covered with long, hyaline hairs roughened with minute, crowded granules, margin beautifully ciliate, crispate-lobate, incurved; asci clavulate, somewhat acute at the apex, 75–100x5–8 $\mu$; sporidia lacking.

On bark and twigs of *Tilia americana*, Wabash. Possibly *Trichopeziza tiliae* (Peck) Sacc.

*Phaeopezia elaeodes* Clements.

Ascoma hemispherical-cupulate, rarely scutellate, waxy sessile, beautifully verrucose without, brownish-black; hymenium exactly olivaceous, margin often irregular, flexuous; asci cylindrical, truncate, 8-spored, 200–300x15–18 $\mu$; sporidia monostichous, spherical, with a large oil-drop, 8 $\mu$ in diam. densely concentrically verruculose, fuscous, 12–15 $\mu$ in diam.; paraphyses linear, many-septate, 5–6 $\mu$ wide.

Ascoma 8–20 mm. wide, 5–13 mm. high.

On wet, sandy banks, Hazel Creek Canyons, Brown county.

*Phaeopezia vinacea* Clements

Ascoma at first broadly cupulate or concave, then applanate, sessile, carnose, without pale brownish-verrucose, blackish-vinous; hymenium vinous, 5–10 mm. in diam.; asci cylindrical, turning blue with iodine, obtuse or truncate, 250–300x12–15 $\mu$; sporidia elliptical, pale fuscous, echinate, prominately 1-guttate, monostichous, 15–18x10 $\mu$; paraphyses linear, fuscous above, scarcely incrassate, 3 $\mu$ wide.

On damp, shady ground, Otowanie Woods, Lancaster county.

BULGARIACEAE.

*Orbilia atropurpurea* Clements.

Ascomata superficial, crowded, sessile, gelatinous when wet, corneous when dry, concave, or applanate, dark purple, exciple dense, fuscous, 2–5 mm. in diam.; asci elongate,

narrowly cylindrical, not turning blue with iodine, 150–160x8–10 $\mu$; sporidia hyaline, granular, occasionally spuriously 1-septate, broadly fusoid, somewhat obtuse at both ends, crowded, monostichous, 20–25x5–6 $\mu$; paraphyses filiform, narrow, 1 $\mu$ wide, above broadened into a minute clava.

On dead wood, Hazel Creek Canyon, Brown county.

AGARICACEAE.

*Mastocephalus carneo-annulatus* Clements.

Pileus campanulate, carnose, exstriate, pellicle incarnate, densely fibrillose-silky; free ends of the fibrils agglutinated, pileus hence covered with appressed, granular, atro-incarnate scales; umbo scarcely distinct, slightly depressed, brick-red-incarnate, tomentose, or broken into minute scales; stipe white, fistulose, shining, silky, incrassate at the base, equal above; annulus fixed, superior or inferior, white, erect, appressed to the stipe; limb abruptly spreading, beautifully margined with incarnate, 3½ mm. wide; lamellae adnexed to a collar, pure white, slightly crowded; spores hyaline, 1–2-guttate, fusoid-ellipsoid, strongly apiculate at one end, 10–12½x4–5 $\mu$.

Pileus 3 cm. wide, 2 cm. high; stipe 4 cm. long, 5 mm. wide above, 10 mm. below.

On shady ground, Otowanie Woods; Wabash, Bellevue. Related to *M. rhodocephalus* (Berk) OK.

*Mastocephalus incarnatus* Clements.

Subcaespitose; pileus thin, slightly carnose, conical, at length campanulate, rarely convex, slightly silky, pale incarnate, with darker scales, margin striate; umbo distinct, becoming black; stipe stuffed, slender, equal, glabrous, very rarely silky, pallid, or somewhat rosy; annulus median, or superior, fixed, erect, white; lamellae remote, subdistant, scarcely ventricose, white; spores minute,

ovate-ellipsoid, uniguttate, apiculate at one end, 5–6x3 $\mu$.

Pileus 2–4 cm. wide, 1½–3 cm. high; stipe 3–6 cm. long, 2–5 mm. thick.

On the ground, among leaves, Wabash, Otowanie Woods.

*Mastocephalus repandus* Clements.

Pileus convex-repand, carnose, covered with minute, crowded, granular scales, incarnate-ochraceous; umbo distinct; stipe graceful, hollow, equal, minutely floccose-farinaceous, white above, pinkish-ochraceous below; annulus white, superior; lamellae free, white, ventricose; spores ellipsoid or globose, 5-7x5 $\mu$.

Pileus 13–18 mm. wide; stipe 2–3 cm. long, 1–1½ mm. wide.

On rich earth, Lincoln. Related to *M. cristatus* (Alb. & Schw.) OK.

*Mastocephalus sulphurinus* Clements.

Pileus campanulate, then convex, subcarnose, pellicle sulphur-yellow, silky, torn into crowded, oblong, or elongate scales, margin distinctly striate-plicate, floccose; umbo distinct, elevated, glabrous, or scarcely rimose, incarnate-brick-colored; stipe graceful, fistulose, pruinose, strongly bulbous at the base, yellow-floccose, above incrassate, shining, isabel-colored; annulus superior, fixed, laerate, sulphur-yellow; lamellae, touching the collar, linear, crowded, nearly white, or pale straw-colored; spores ovate-ellipsoid, uniguttate, 7–9x4–5 $\mu$.

Pileus 1½-3 cm. wide; stipe 4 cm. long, 3–4 mm. wide above, 6–7 mm. below.

On the ground, Lincoln.

*Clitocybe megalospora* Clements.

Pileus plano-convex, subcarnose, even, glabrous, yellow-orchraceous, darker at the center, margin thin; stipe graceful, fistulose, glabrous, becoming white; lamellae white, distant, short-decurrent, pale yellow; spores large,

hyaline, with a large oil drop 10 $\mu$ in diam., ovoid, or slightly limoniform, 17–18x10–12 $\mu$.

Pileus 3 cm. wide; stipe 7 cm. long, 2 mm. thick.

On wet earth, Saltillo.

*Collybia discipes* Clements.

Pileus convex, at length explanate, subcarnose, even, glabrous, striate at the margin, grayish-drab; umbo wide, darker, grayish-brown; stipe cartilaginous, stuffed, glabrous, shining, white, arising from a hypogaeous disk; lamellae free, remote, crowded, ventricose, 4–6 $\mu$ wide, pale orchraceous; cystidia exactly cyathiform or sometimes flask-shaped, 2–3 cuspidate at the apex, 45–53 $\mu$ long, 20 $\mu$ wide at the base, 10 $\mu$ at the apex; spores ellipsoid, or ovate, granular within, 5–6x3–4 $\mu$.

Pileus 5 cm. wide; stipe 3½ cm long, 5 mm. wide.

On damp ground, Beatrice.

*Collybia umbrina* Clements.

Pileus convex, carnose, umbonate, brown, glabrous, exstriate, very viscid, dotted with thin, black lines; umbo black; stipe very long, attenuate above, carnose, stuffed, glabrous, longitudinally striate towards the apex, radicate, white, becoming fuscous below; lamellae adnate, broad, distant, unequal, white; spores large, irregularly limoniform, with large oil-drop 10 $\mu$ in diam., 12–13x17–18 $\mu$.

Pileus 4 cm. wide; stipe 25 cm. long, 5 mm. wide above, 10 mm. below.

On decaying twigs buried in the ground, Bellevue. Perhaps but a variety of *C. radicata* Rehl.

*Collybia velutina* Clements.

Pileus convex, or plane, carnose-cartilaginous, even, covered with a dense, brown-fulvous tomentum, reddish-chestnut-colored; stipe fistulose, cartilaginous, equal, densely clothed with a silky, fulvous-ochraceous tomentum; lamel-

lae adnexed, narrow, unequal, crowded, ochraceous; spores ellipsoid, 7–8x5 $\mu$.

Pileus 1–3 cm. wide; stipe 3–5 cm. long, 1½–3 mm. thick.

On decaying logs, Bellevue.

*Lactarius villosus* Clements.

Pileus at first convex, margin involute, beset with the fibrils of the veil, then explanate-umbilicate, rarely infundibuliform, spongy-carnose, often irregular, silky-villose, with long, innate, agglutinated fibrils, disk often minutely tomentose-areolate, at first white, then strongly tinged with orange; stipe short, thick, often excentric, attenuated downwards, solid, tomentose, white; lamellae adnexed, decurrent when the pileus is infundibuliform, linear, very crowded, white, then tinged with ochracrous; milk copious, very pungent, white, immutable; spores irregularly ellipsoid, or ovoid, uniguttate, echinulate, 5–6x4–5 $\mu$; cystidia numerous, rugose, lanceolate, 25–30x5 $\mu$.

Pileus 6–12 cm. wide; stipe 1½–2½ cm. long and thick.

On sandy ground, Hazel Creek Canyons, Brown county.

*Marasmius albo-marginatus* Clements.

Pileus minute, solitary, membranaceous, convex, glabrous, sulcate, purple, paler at the margin; stipe shining, glabrous, equal, lemon-yellow; lamellae few, 7–8, adnate, white; basidia 12–14x6–7 $\mu$; spores (?) 5x2–3 $\mu$, ovoid.

Pileus 1½ mm. wide; stipe 1 cm. long, ½ mm. thick.

On the ground in shady woods, Beatrice.

*Marasmius fulviceps* Clements.

Pileus convex-campanulate, then convex, or almost applanate, membranaceous, strongly radiate-sulcate, rugose, glabrous, umbonate, fulvo-ferruginous; stipe graceful, with a medulla, flexuose, spirally twisted above, entirely smooth, shining, dark-brown, paler at the apex; lamellae adnexed to a collar around the stipe, with connecting veins, distant, 15–20, edge flexuous, dark-ochroleucous; spores hyaline, fusoid, 18–20x5 $\mu$.

Pileus 5–15 mm. wide; stipe 4–6 cm. long, ½–1 mm. thick. On dead leaves, Bellevue. Related to *M. schweinfurthianus* P. Henn.

*Marasmius hirtipes* Clements.

Pileus plano-convex, membranaceous, scarcely umbilicate, slightly radiate-sulcate, glabrous, fulvous; stipe elongated, filiform, hollow, clothed with spreading, white or fulvous hairs, dark-rufous; lamellae somewhat numerous, adnate, linear, white, or dilutely yellow; spores ellipsoid, minutely 2-guttulate, 7x4 $\mu$.

Pileus 3–7 mm.; stipe 3–8 cm. long, ½–¾ mm. thick.

*Marasmius papillosus* Clements.

Pileus conico-papillate, then campanulate, or even explanate, membranaceous, striate, glabrous, cream-colored, or ochraceous; stipe graceful, equal, cartilaginous, pruinose above, densely lanate below, dirty-white, or cream-colored; lamellae few, adnexed, white; spores ellipsoid, 6x4 $\mu$.

Pileus 2–6 mm. wide; stipe 1½–3 cm. long, ½–1 mm. thick. On decaying logs, Beatrice.

*Orcella depressa* Clements.

Pileus plano-convex, or depressed in the center, sub-membranaceous, glabrous, even, ochraceous, centre darker; stipe short, solid, glabrous, white, incrassate toward either end; lamellae decurrent, subdistant, light cinnamon-colored; spores irregularly ellipsoid, pale rosy, 8–10x4–5 $\mu$.

Pileus ¾–1½ cm. wide; stipe 1½–2½ cm. long, 2 mm. thick. On fallen leaves, Bellevue.

*Nolanea atro-cyanea* Clements.

Pileus membranaceous, campanulate, glabrous, or minutely verrucose, papillate-umbonate, striate-lacerate at the margin, prussian blue; stipe graceful, equal, cartilaginous, glabrous, bright blue, or slightly tinged with sea-green; lamellae receding slightly, narrow, subdistant, cream-

colored; spores globose, or ellipsoid, 3–7-angular or apiculate, uniguttate, rosy, 5–7x7–9 $\mu$.

Pileus 1–3 mm. wide; stipe 1 cm. long, $\frac{1}{2}$–1 mm. thick.

On the ground in woods, Bellevue.

Under the Rochester Rules, *Nolanea* Fr. seems to be available, notwithstanding the prior *Nolana* L.

*Hebeloma flavum* Clements.

Pileus persistently campanulate, fleshy, viscid, covered with nearly concentric, fulvous, scales 2 mm. wide, margin incurved, appendiculate, bright yellow; stipe thick, solid, short, curved, densely beset with concentric, floccose, fulvous scales, except at the base, yellow; lamellae subsinuate, with a decurrent tooth, slightly crowded, drab; spores ovoid, ochroleucous, 7–8x4 $\mu$.

Pileus 5–6 cm. wide; stipe 3–5 cm. long, $\frac{2}{3}$–2 cm. thick.

On ground, Bellevue.

*Galera pulchra* Clements.

Pileus conical, broad, membranaceous, striate-sulcate to the middle, minutely and densely silky-tomentose; umbo distinct, ochraceous, cream-colored; stipe elongated, cartilaginous, graceful, attenuate, fistulose, characteristically longitudinally lineate striate-pruinose, cream-colored; lamellae adnexed, narrow, linear, slightly crowded, ochraceous, spores sublimoniform, fulvous, eguttate, 15–16x9–10 $\mu$.

Pileus $2\frac{1}{2}$ cm. wide, 2 cm. high; stipe 7–8 cm. long, 2 mm. thick.

On rich, wet ground, Otowanie Woods.

*Gomphos caesius* Clements.

Pileus at first campanulate-convex, then explanate, carnose, even, glabrous, not viscid, or obsoletely so, margin involute, dark eye-blue-violet, at length spotted with brown; flesh eye-blue, immutable; stipe fibrous-carnose, solid, with an exactly turbinate bulb, which in age becomes nearly globose, margin of bulb and base of stipe violet,

stipe violet above, ochroleucous below, with a false annulus composed of the fulvous fibrils of the cortina just beneath the apex; cortina cobwebby, pale eye-blue; lamellae adnate, with a decurrent tooth subdistant, at first white, then cinnamon-colored, never violet; spores brownish-fulvous, verrucose, subelliptical, or globose, 8–10x7–8 $\mu$.

Pileus 4–8 cm. wide; stipe 1–5 cm. long, 1–1½ cm. thick; bulb 3–4 cm. high, 4 cm. wide.

On ground in woods, bluffs of the Missouri river, Bellevue. Related to *G. glaucopus* (Schaff.) OK.

*Clarkeinda plana* Clements.

Pileus carnose, applanate, exactly plane, even, glabrous, ochraceous, or slightly fulvous; stipe short, stout, solid, attenuate above, fibrillose-aquamulose, becoming fulvous; volva ample, adpressed, membranaceous; lamellae free, ventricose, crowded, black-cinnamon-colored; spores short-ellipsoid, or globose, uniguttate, purple-fulvous, 4–6x 5–6 $\mu$.

Pileus 7 cm. wide; stipe 3 cm. high, 2 cm. thick.

On manured ground, Meadville, Keya Paha county.

**Gymnochilus** nom. nov.

*Psathyra* Fr. (1821), not *Psathura* Commerson, Juss. Gen. (1789).

*Gymnochilus roseolus* Clements.

Pileus hemispherical or convex, membranaceous, glabrous, or minutely micaceous, irregular regulose, vinous when wet, incarnate when dry; stipe tall, fragile, fistulose, shining, glabrous, apex beset with a few large, farinaceous granules; lamellae slightly remote, purplish-cinnamon-colored; spores ellipsoid, dark-purple, 12–13x7–8 $\mu$.

Pileus 1–2½ cm. wide; stipe 4–8 cm. long, 2 mm. thick.

On ground, bluffs of the Missouri river, Bellevue.

## ADDITIONS TO THE REPORTED FLORA OF THE STATE.

[* Indicates new host only.]

### PHYTOMYXINEAE.

* *Phytomyxa leguminosarum* (Frank) Schroet.
On *Astragalus carolinianus*, Bellevue. (4251)
On *Cassia chamaecrista*, Bellevue. (4247)
On *Meibomia grandiflora*, Bellevue. (4248)

### NOSTOCACEAE.

*Nodularia paludosa* Wolle.
In Salt Lake, Lincoln. (4501)

### PALMELLACEAE.

*Haematococcus lacustris* (Girod) Rost.
On horse droppings, Lincoln (4499), in irrigation ditch, Rock Creek, Keya Paha county. (4500)

### DESMIDIACEAE.

*Disphinctium notabile* (Breb.) Hansg.
Glen Rock. (4502)

### BACILLARIACEAE.

*Amphiprora conspicua* Grev.
Lincoln. (4587)
*Amphora ovalis* Kuetz.
Plattsmouth. (4588)
*Amphora ovalis affinis* (Kuetz.) V. H.
Lincoln. (4589)
*Amphora ovalis gracilis* (Ehr.) V. H.
Talmage; fossil, Mullen. (4590)
*Amphora ovalis pediculus* (Kuetz.) V. H.
Peru, Salem, Fairbury, Humboldt, Bellevue, Auburn, Plattsmouth, Sheridan county; Weeping Water. (4591)

*Amphora salina borealis* (Kuetz.) Elmore.
*Amphora borealis* Kuetz. Bacill. 108. (1844)
*Amphora salina minor* V. H. Syn 57. (1880)
Fairbury. (4592.)

*Bacillaria paradoxa* (Gmel.) Grun. Crete. (4759)

*Campylodiscus campylodiscus* (Ehr.) Elmore.
*Surirella campylodiscus* Ehr. Verb. 424. (1843)
*Campylodiscus ehrenbergii* Ralfs, Pritchard Inf. 802. (1861)
Talmage, Fairbury, Brock, Lincoln, Auburn, Arago, Brownville, Weeping Water, Ashland. (4593)

*Cocconeis placentula* Ehr.
Holt county, Bellevue; fossil, Mullen. (4594)

*Cyclotella meneghiniana* Kuetz.
Lincoln, Weeping Water, Talmage. (4595)

*Cymbella fusidium* (Ehr.) Elmore.
*Cocconema fusidium* Ehr. Inf. 26. (1838)
*Cymbella affinis* Kuetz. Bacill. 80. (1844)
Humboldt. (4596)

*Cymbella cuspidata* Kuetz.
Bellevue; fossil, Mullen. (4597)

*Cymbella inequalis* (Ehr.) Elmore.
*Navicula inequalis* Ehr. Inf. 184. (1838)
*Cymbella ehrenbergii* Kuetz. Bacill. 79. (1844)
Holt county, Weeping Water, Talmage; fossil, Mullen. (4598)

*Cymbella levis* Naeg.
Fossil, Mullen. (4599)

*Cymbella cistula* (Hempr.) Kirchn.
Fossil, Mullen. (4600)

*Cystopleura gibba ventricosa* (Kuetz.) Grun.
Rulo, Georgetown, Peru, Arago, Humboldt, Tecumseh, Bellevue, Plattsmouth, Cherry county, Holt county. (4601)

*Cystopleura gibberula* (Ehr.) Kuntzo.
Talmage. (4602)
*Cystopleura musculus constricta* (Breb.) V. H.
Sheridan county. (4603)
*Cystopleura turgida vertagus* (Kuetz.) Grun.
Fossil, central Nebraska. (4604)
*Cystopleura turgida westermannii* (Ehr.) Grun.
Fossil, central Nebraska. (4605)
*Denticula elegans* Kuetz.
Fossil, Mullen. (4606)
*Diatoma vulgare* Bory.
Fossil, central Nebraska. (4607)
*Encyonema caespitosum auerswaldii* (Rabenh.) V. H.
Fossil, Mullen. (4608)
*Encyonema prostratum* (Berk.) Ralfs.
Fairbury. (4609)
*Eunotia formica* Ehr.
Fossil, Mullen. (4610)
*Fragilaria construens venter* Grun
Fossil, central Nebraska, Mullen. (4611)
*Fragilaria elliptica* Schum.
Fossil, central Nebraska, Mullen. (4612)
*Fragilaria virescens* Ralfs.
Fossil, Mullen. (4613)
*Frustulia bohemica* (Ehr.) Rabenh.
Sheridan and Cherry counties. (4614)
*Gomphonema acuminatum* Ehr.
Bellevue. (4615)
*Gomphonema gracile* Ehr.
Fossil, Mullen. (4616)
*Gomphonema micropus* Kuetz.
Lincoln. (4617)
*Gomphonema montanum* Schum.
Auburn, fossil, central Nebraska. (4618)

*Gomphonema montanum commutatum* Grun.
Talmage, Weeping Water. (4619)
*Gomphonema montanum subclavatum* Grun.
Bratton, Talmage; fossil, Mullen. (4620)
*Gomponema rostellatum lanceolatum* V. H.
Talmage. (4621)
*Gomphonema turris* Ehr.
Talmage. (4622)
*Hantzschia amphioxys* (Ehr.) Grun.
Lincoln, Talmage, Weeping Water, Sheridan, Cherry and Holt counties; fossil Mullen, central Nebraska. (4623)
*Hantzschia elongata* (Hantzsch) Grun.
Talmage, Holt county; fossil, Mullen. (4624)
*Homoeocladia filiformis* W. Sm.
Fairbury. (4625)
*Melosira distans* (Ehr.) Kuetz.
Bellevue; fossil, central Nebraska, Mullen. (4626)
*Navicula ambigua* Ehr.
Talmage, Tecumseh, Humboldt, Brownville, Weeping Water Sheridan county. (4627)
*Navicula atomoides* Grun.
Falls City, Talmage, Fairbury, Humboldt, Bellvue, Auburn (4628)
*Navicula atomis* (Kuetz.) Grun.
Humboldt, Talmage, Peru. (4629)
*Navicula bacilliformis* Grun.
Fossil, Mullen. (4630)
*Navicula bahusiensis* Grun.
Fairbury. (4631)
*Navicula coccoheiformis* Greg.
Humboldt. (4632)
*Navicula cryptocephala veneta* (Kuetz.) Rabenh.
Brock, Talmage, Peru, Pawnee City, Humboldt, Julian, Falls City, Rulo, Dawson, Salem, Aspinwall, Fairbury, Tecumseh, Auburn, Weeping Water, Ashland. (4633)

*Navicula cuspidata* Kuetz.
Lincoln, Talmage. (4634)
*Navicula decurrens* Kuetz.
Talmage. (4635)
*Navicula dicephala* Ehr.
Fairbury. (4636)
*Navicula digitato-radiata cyprinus* (W. Sm.) V. H.
Talmage. (4637)
*Navicula elliptica minutissima* Grun.
Talmage. (4638)
*Navicula falaisensis* Grun.
Fairbury. (4639)
*Navicula fasciata* Lagerst.
Talmage. (4640)
*Navicula inflata* Kuetz.
Lincoln, Fairbury. (4642)
*Navicula iridis* Ehr.
Auburn; fossil, central Nebraska. (4643)
*Navicula iridis affinis* (Ehr.) V. H.
Talmage, Auburn; fossil, Mullen. (4644)
*Navicula iridis amphigomphus* (Ehr.) V. H.
Fossil, central Nebraska, Mullen. (4645)
*Navicula iridis dubia* (Ehr.) V. H.
Lincoln, Talmage. (4647)
*Navicula levissima* Kuetz.
Sheridan county. (4646)
*Navicula liburnica* Grun.
Lincoln. (4648)
*Navicula limosa* Kuetz.
Cook, Talmage. (4649)
*Navicula macilenta* Ehr. Inf. 183. 1838.
*Navicula oblonga* Kuetz. Bacill. 97. 1844.
Talmage; fossil, central Nebraska, Mullen. (4650)
*Navicula mesolepta* Ehr.
Lincoln, Auburn. (4651)

*Navicula mesolepta therones* (Ehr.) V. H.
Talmage. (4652)
*Navicula mutica goeppertiana* (Bleisch) Cl. & Grun.
Talmage, Rulo. (4653)
*Navicula parallelistriata* Pant.
Fossil, Mullen. (4654)
*Navicula parva* (Ehr.) Elmore.
*Stauroptera parva* Ehr. Verb 135. 1843.
*Navicula stauroptera* Grun. Wien Verhandl. **1860**:516. 1860.
Fossil, Mullen. (4655)
*Navicula parva parva* (Grun.) Elmore.
*Navicula stauroptera parva* Grun.
Talmage, Julian, Arago. (4656)
*Navicula peregrina* (Ehr.) Kuetz.
Lincoln. (4657)
*Navicula placentula* (Ehr.) Kuetz.
Fossil, Mullen. (4658)
*Navicula placentula tumida* (W. Sm.) Elmore.
*Navicula tumida* W. Sm. Brit. Diat. 1:52. 1853.
*Navicula anglica* Ralfs, Pritch. Inf. 900. 1861.
Fossil, Mullen. (4659)
*Navicula pupula* Kuetz.
Nebraska City, Talmage; fossil, central Nebraska, Mullen. (4660)
*Navicula pygmaea* Kuetz.
Talmage, Salem, Humboldt, Weeping Water. (4661)
*Navicula radiosa* Kuetz.
Bellevue. (4662)
*Navicula rhyncocephala amphiceros* (Kuetz.) Grun.
Talmage, Humboldt. (4663)
*Navicula rostrata* Ehr.
Talmage; fossil, central Nebraska. (4664)
*Navicula saugerii* Des.
Salem. (4665)

*Navicula subcapitata paucistriata* V. H.
Bellevue. (4666)
*Navicula viridis commutata* Grun.
Lincoln. (4667)
*Navicula viridis sublinearis* Grun.
Auburn. (4668)
*Nitzschia acicularis* (Kuetz.) W. Sm.
Julian, Rulo, Lincoln, Salem, Fairbury, Humboldt, Talmage, Arago, Weeping Water, Ashland, Cherry county. (4669)
*Nitzschia amphibia* Grun.
Talmage, St. Deroin, Fairbury, Humboldt, Auburn, Weeping Water, Ashland; fossil, Mullen. (4670)
*Nitzschia communis obtusa* Grun.
Lincoln (4671)
*Nitzschia debilis* (Arnott & Ryl.) Grun.
Talmage, Brownville, Weeping Water, Lincoln (4672)
*Nitzschia fasciculata* Grun.
Auburn. (4673)
*Nitzschia frauenfeldii* Grun.
Lincoln, Weeping Water. (4674)
*Nitzschia frustulum* (Kuetz.) Grun.
Salem, Holt county. (4675)
*Nitzschia hungarica* Grun.
Lincoln, Salem, Auburn, Talmage, Fairbury. (4676)
*Nitzschia intermedia* Hantzsch.
Dawsons, Salem, Peru. (4677)
*Nitzschia lanceolata* W. Sm.
Lincoln. (4678)
*Nitzschia linearis tenuis* (W. Sm.) Grun.
Humboldt, Fairbury, Weeping Water. (4679)
*Nitzschia obtusa nana* Grun.
Fairbury. (4680)
*Nitzschia obtusa scapelliformis* Grun.
Talmage. (4681)

*Nitzschia palea debilis* (Kuetz.) Grun.
Holt County. (4682)
*Nitzschia palea fonticola* Grun.
Talmage, Brock, Tecumseh, Pawnee City, Humboldt, Dawson, Aspinwall, St. Deroin, Fairbury, Bellevue, Weeping Water, Sheridan County, Cherry County. (4683)
*Nitzschia palea tenuirostris* V. H.
Talmage. (4684)
*Nitzschia sigma* (Kuetz.) W. Sm.
Sheridan County. Julian, Auburn, Ashland. (4685)
*Nitzschia sigma diminuta* V. H.
Talmage. (4686)
*Nitzschia sigma intercedens* Grun.
Talmage. (4687)
*Nitzschia sigma lamprocarpa* (Ehr.) Elmore.
*Navicula lamprocarpa* Ehr., Kuetz., Bacill. 22. 1844.
*Nitzschia sigma rigida* (Kuetz.) Grun., Kasp. Alg. 119. 1878.
Fairbury, Auburn, Lincoln. (4688)
*Nitzschia sigma rigidula* Grun.
Lincoln. (4689)
*Nitzschia sigma subcapitata* Rabenh.
Talmage. (4690)
*Nitzschia stagnorum* Rabenh.
Talmage. (4691)
*Nitzschia subtilis* (Kuetz.?) Grun.
Arago, Julian, Talmage, Lincoln. (4692)
*Nitzschia subtilis paleacea* Grun.
Humboldt, Weeping Water, Talmage.
*Nitzschia tryblionella* Hantzsch.
Fairbury, Lincoln. (4730)
*Nitzschia tryblionella levidensis* (W. Sm.) Grun.
Talmage, Nemaha City, Cherry county, Auburn, Weeping Water, Lincoln. (4700)
*Nitzschia tryblionella salinarum* Grun.

Fairbury. (4712)

*Nitzschia vitrea recta* (Hantzsch.) V. H.

Arago, Peru. (4729)

*Odontidium pinnatum* (Ehrb.) Kuetz. Bacil. 44. 1844.

*Fragilaria pinnata* Ehrb. Verbreit. 127. 1843

*Dimeregramma mutabile* Pritchard Infus. 790. 1845.

*Odontidium mutabile* W. Sm. Brit. Diat. 2:17. 1853.

*Odontidium pinnatum intermedium* (Grun.) Elmore.

*Fragilaria mutablis intermedia* Grun. Verb. Wien. Zool. Bot. Ges. 12, *pl. 7, f. 9.* 1862.

Bellevue. (4701)

*Opephora pacifica* (Grun.) Petit.

Fossil, Mullen. (4713)

*Pleurosigma thuringicum* (Kuetz.) Elmore.

*Navicula thuringica* Kuetz. Bacil. 102. 1844.

*Navicula angulata* Queck. Pract. Treat. on the Microsc. 438. 1848.

*Pleurosigma angulatum* W. Sm. Ann. Nat. Hist. **1853**:7. 1853.

*Pleurosigma thuringicum elongatum* (W. Sm.) Elmore.

*Pleurosigma elongatum* W. Sm Brit. Diat. **1**:64. 1853.

*Pleurosigma angulatum elongatum* V. H. Syn. 115. 1880.

*Pleurosigma thuringicum elongatum* forma *fallax* Grun.

Lincoln. (4721)

*Pleurosigma obscurum* W. Sm.

Julian, Ashland, Lincoln. (4702)

*Pleurosigma scalproides* Rabenh.

Talmage. (4728)

*Pleurosigma spencerii nodiferum* Grun.

Talmage, Peru. (4705)

*Pseudoeunotia lunaris* (Ehr.) Grun.

Peru, Bellevue, Auburn, Talmage; fossil, Mullen. (4720)

*Rhoiconeis trinodis inflata* Schultze.

Auburn, Arago, Talmage, Weeping Water; fossil, Mullen. (4711)

*Stauroneis anceps producta* Lagerst.
Weeping Water. (4703)
*Stauroneis gracilis* W. Sm.
Plattsmouth. (4722)
*Stauroneis heufleriana* Grun.
Holt county. (4710)
*Suriraya elegans* Ehr.
Holt county. (4709)
*Suriraya ovalis* Breb.
Talmage, Cherry county. (4727)
*Suriraya ovalis minuta* (Breb.) V. H.
Talmage, Julian, Salem, Fairbury. (4719)
*Suriraya ovalis pinnata* (W. Sm.) V. H.
Cook, Auburn, Salem, Fairbury, Arago, Talmage, Weeping Water. (4714)
*Suriraya splendida* (Ehr.) Kuetz.
Talmage. (4726)
*Synedra affinis* Kuetz.
Holt county. (4708)
*Synedra affinis delicatula* Grun.
Weeping Water. (4723)
*Synedra affinis tabulata* (Ag.) V. H.
Lincoln. (4715)
*Synedra capitata* Ehr.
Bellevue; fossil, central Nebraska, Mullen. (4724)
*Synedra famelica minuscula* Grun.
Fossil, central Nebraska, Mullen. (4725)
*Synedra radians* Kuetz.
Fossil, Mullen. (4706)
*Synedra rumpens* Kuetz.
Talmage. (4707)
*Synedra tenuissima* Kuetz. Bacil. 68. 1844.
*Synedra acus* Kuetz. l. c.
*Frustulia tenuissima* Kuetz. Syn. Diat. 24. 1834.

*Synedra tenuissima angustissima* (Grun.) Elmore.
*Synedra acus angustissima* Grun. in V. H. Syn. 151. 1880.
Weeping Water. (4716)
*Synedra tenuissima delicatissima* (W. Sm.) Elmore.
*Synedra delicatissima* W. Sm. Brit. Diat. 1 : 72. 1853.
*Synedra acus delicatissima* Grun. in VH. Syn. 151. 1880.
Tecumseh, Cherry county. (4718)
*Synedra ulna amphirhynchus* (Ehr.) Grun.
Talmage; fossil, Mullen. (4731)
*Synedra ulna danica* (Kuetz.) VH.
Fairbury, Holt couuty. (4717)
*Synedra ulna oxyrhynchus* (Kuetz.) VH.
Fossil, Mullen. (4732)
*Synedra ulna vitrea* (Bory) VH.
Arago. (4733)
*Synedra vaucheriae* Kuetz.
Lincoln. (4735)
*Tabellaria fenestrata* (Lyngb.) Kuetz.
Fossil, Mullen. (4734)

ZYGNEMACEAE.

*Spirogyra jugalis* (Dillw.) Kuetz.
In ponds, Lincoln. (4504)

MUCORACEAE.

*Circinella umbellata* Van. Tieg. & Le M.
On horse dung, Lincoln. (4495)
*Piptocephalis freseniana* De Bary & Wor.
On horse dung, with the preceding, Lincoln. (4494)

PERONOSPORACEAE.

**Albugo candida* (Pers.) S. F. Gray.
On *Lepidium sativum*, Lincoln. (4447)

ULOTRICHIACEAE.

*Conferva tenerrima* Kuetz.
In tank in the zoological laboratory, Lincoln. (4496)

SPHAERIACEAE.

*Eutypella scoparia* (Ell.) Sacc.
On dead twigs of *Ulmus*, Weeping Water. (4434)

*Diaporthe tuberculosa* (Ell.) Sacc.
On stems of *Amelanchier canadensis*, Weeping Water. (4435)

*Diaporthe claviceps* Ell. & Ever.
On twigs of *Ostrya virginiana*, Weeping Water. (4430)

*Valsa toxici* (Schw.) Ell. & Ever.
On dead stems of *Rhus radicans*, Weeping Water. (4484)

*Ohleria modesta* Fkl.
On decorticated branches of *Ulmus*, Lincoln. (4433)

*Melanomma alpinum* Speg.
On decorticated wood of *Rhamnus lanceolata*, Weeping Water. (4581)

*Sporormia minima* Auersw.
On horse dung, Lincoln. (4487)

*Massaria conspurcata* (Wallr.) Sacc.
On dead branches of *Prunus americana*, Lincoln. (4432)

*Massaria vomitoria* B. & C.
On fallen twigs of *Amelanchier canadensis*, Weeping Water. (4485)

HYPOCREACEAE.

*Cordyceps militaris* (L.) Lk.
In the larva of a butterfly, Bellevue. (4411)

HYSTERIACEAE.

*Hysterium pulicare lenticulare* Fr.
On the bark of *Ulmus fulva*, Lincoln. (4423)

*Hysterographium elongatum* (Wahlen.) Corda.
On decaying wood of *Rhamnus lanceolata*, Weeping Water. (4583)

*Hysterographium kansense* Ell. & Ever.
On bark of *Quercus macrocarpa*, Weeping Water. (4429)

*Hysterographium rousselii* (De Not.) Sacc.
On decorticated wood, Bellevue. (4422)
*Hysterographium syringae* (Schw.) Sacc.
On dead wood, Brownville. (4497)

UREDINEAE.

*Uromyces plumbarius* Peck.
On *Oenothera biennis*, Crete. (4358)
*Aecidium allenii* Clinton.
On *Lepargyraea argentea*, Valentine. (4396)
*Aecidium anisotomes* Reichardt.
On leaves and fruits of *Peucedanum foeniculaceum*, Weeping Water. (4395)

SPHAERIOIDEAE.

*Phyllosticta gentianicola* (DC.) Fr.
On *Gentiana andrewsii*, Ewing. (4482)
*Macrophoma ricini* (Cke.) Berl. & Vogl.
On *Ricinus communis* (dead stalks) Lincoln. (4384)
*Cytospora ambiens* Sacc.
On twigs of *Ulnus*, Weeping Water. (4583)
*Cytospora ampelopsidis* C. Mass.
In stems of *Parthenocissus quinquefolius*, Lincoln. (4498)
*Cytospora cincta* Sacc.
In twigs of *Prunus cerasus*, Lincoln. (4450)
*Sphaeropsis albescens* Ell. & Ever.
On dead twigs of *Acer negundo*, Lincoln. (4428)
*Diplodia maydis* (Berk.) Sacc.
On old stalks of *Zea mays*, Weeping Water. (4483)
*Chaetomella atra* Fckl.
On dead stems of *Allionia nyctaginea*, Lincoln. (4545)
*Septoria chenopodii* West.
On *Chenopodium album*, Valentine. (4449)
If the forms found on *Chenopodium album* described as *Septoria chenopodii*, *S. atriplicis*, and *S. westendorpii* are

to be regarded as distinct, the specimens reported should be referred to *S. atriplicis*; but there seems to be no sufficient reason for distinguishing them. See Syl. Fung. **10**: 380, Farlow & Seymour, Host Index 2: 89. If the several forms are united as one species, the name *S. chenopodii* has priority.

*Septoria helianthi* Ell. & Kell.

On leaves of *Helianthus annuus*, Lincoln. (4369)

*Rhabdospora helianthicola* (Cke. & Hark.) Sacc.

On stems of *Helianthus annuus*, Lincoln. (4365)

NECTRIOIDEAE.

*Cyphina lanuginosa* (Peck) Sacc.

On dead leaves, Beatrice. (4417)

EXCIPULACEAE.

*Dinemasporium graminum* Lev.

In stems of *Zea mays*, Beatrice. (4415)

*Dinemasporium strigosum leptosporum* Sacc.

On stems of *Heliathus*, Lincoln. (4399)

MELANCONIEAE.

*Gloeosporium tuberculoides* Sacc.

On dying leaves of *Acer saccharinum*, McCook. (4454)

*Marsonia juglandis* (Lib.) Sacc.

On *Juglans nigra*, Saltillo. (4328)

MUCEDINACEAE.

*Monilia fumosa* Sacc.?

On decaying seedlings of *Cucurbita maxima* in the laboratory, Lincoln. (4586)

*Alysidium fasciculatum* (Grev.) Pound & Clements, nom. nov.

*Acrospermum fasciculatum* Grev. Fl. Edin, 469. 1824

*Oidium fasciculatum* Berk., Smith's Engl. Flor. 5: 349. 1836.

*Oospora fasciculata* Sacc. & Vogl. Sacc. Syl. Fung. 4 : 11. 1886.

On lemon peel, Lincoln. (4388)

*Alysidium* Kunze. Myk. Heft. 1 : 11, 1817 must be used instead of *Oospora* Wallr. Fl. Crypt. Ger. 2 : 182, 1833, the name adopted by Saccardo. *Alysidium* was founded for *A. fulvum* Kunze. = *Oospara fulva* Sacc. & Vogl. l. c. Moreover, Bonorden, Handb. 35, 1851, took up *Alysidium* and described several species, one a *Torula*, but the rest placed in *Oospora* by Saccardo. Even those who would oppose a year limit of fifty years to the rule of priority, must restore the name *Alysidium*. The saprophytic species were generally included with the parasitic ones in *Oidium* until 1886, and neither *Oospora* nor *Alysidium* were in general use. But the latter having been adopted in 1851 by Bonorden cannot be called obsolete. *Acrospermum* Nees 1816 was founded on *Oidium monilioides* and was applied to this genus by Persoon in 1822.

*Rhopalomyces elegans* Corda.

On decaying pericarps and growing seedlings of *Beta alba*, Lincoln. (4503)

*Sterigmatocystis variabilis* (Gasp.) Sacc.

On bread, Lincoln. (4506)

*Rhinotrichum corticioides* Cooke.

On wood, Saltillo. (4309)

*Trichothecium sublutescens* (Peck) Sacc.

On bark of *Populus monilifera*, Lincoln. (4488)

*Jacobaschella alba* (Bon.) OK.

On decaying *Pleurotus*, Lincoln. (4585)

DEMATIACEAE.

*Cladosporium grumosum* (Pers.) Lk.

On ferns in greenhouse, Plattsmouth. (4359)

*Cladosporium atrum* Lk.

On decaying water-melon rind, Lincoln. (4489)

*Diplosporium cookei* (Sacc.) OK.
On rotten wood, Endicott. (4316)
*Heterosporium allii sisyrinchii* Speg.
On leaves of *Iris versicolor*, Peru. (4555)
*Heterosporium variabile* Cooke.
In the sap of living trees of *Ulmus fulva*, Peru. (4547)
*Clasterosporium hirudo* Sacc.
On decaying wood, Saltillo. (4323)
*Septonema atrum* Sacc.
On dead branches of *Ulmus*, Weeping Water. (4580)
*Septonema toruloideum* Cke. & Ell.
On an insect-gall, Franklin. (4319)
*Sporoschisma mirabile* B. & Br.
On rotten wood, Bellevue. (4315)
*Coniothecium effusum* Corda.
On decorticated twigs of *Populus monilifera*, Memphis. (4577)
*Macrosporium caudatum* Cke. & Ell.
On leaves of *Ficus elastica*, Lincoln. (4516)
*Macrosporium fasciculatum* Cke. & Ell.
On pods of the cultivated bean, Kennedy. (4481)
*Macrosporium inquinans* Cke. & Ell.
On sun-flower stalks, Lincoln. (4360)
*Macrosporium maydis* Cke. & Ell.
On leaves of *Zea mays*, Lincoln. (4404)
*Speira toruloides* Corda.
On decorticated wood of *Rhamnus lanceolata*, Weeping Water. (4582)
*Helicosporium vegetum* Nees.
On decaying oak twigs, Brownville. (4486)

STILBACEAE.

*Stilbum fasciculatum* B. & Br.
On *Dianthus sinensis*, Lincoln. (3321)

*Isaria candida* Schw.

On decaying wood, Ewing. (4517)

*Stysanus stemonites* (Pers.) Corda.

On horse-dung in culture jar, Lincoln. (4521)

*Graphium stilboideum* Corda.

On sawdust in culture jar, Lincoln. (4566)

TUBERCULARIACEAE.

*Knyaria fatiscens* (Schw.) OK.

On twigs of *Prunus americana*, Wabash. (4264)

*Fusarium nucicola* Karst. & Har.

On nuts of *Juglans nigra*, and on acorn cups of *Quercus macrocarpa*, Otowanie Woods. (4456)

*Fusarium salmonicolor* B. & C.

On sunflower stalks, Beatrice. (4325)

*Fusarium sarcochroum* (Besm.) Sacc.

On fruits of *Acer saccharinum*, Lincoln. (4448)

*Fusarium tenuissimum* (Peck.) Sacc.

On sunflower stalks, Beatrice. (4310)

HELVELLACEAE.

*Helvella crispa* (Scop.) Fr.

In shady places, Bellevue. (4421)

*Helvella elastica* Bull.

In sandy canyons, Long Pine. (4407)

*Helvella macropus* (Pers.) Karst.

On sandy ground, Hazel Creek Canyons, Brown county. (4531)

*Helvella pezizoides* Afz.

On sandy ground, Meadville. (4479)

*Geoglossum nigritum* Pers.

Canyons of the Niobrara River, Brown county. (4475)

*Geoglossum ophioglossoides* (L.) Sacc.

On shady ground, Bellevue. (4420)

PEZIZACEAE.

*Peziza atro-vinosa* Ger. & Cke.
On rich ground, Meadville, Keya Paha county. (4539)

*Peziza badia* Pers.
On ground, Weeping Water, Bellevue. (4455)

*Peziza sepiatra* Cooke. (?)
On wet, decaying wood, Niobrara river. (4555)

*Pyronema omphalodes* Bull.
On wet, ploughed ground, Lincoln. (4468)

*Barlaea constellatio* B. & Br.
On ground among mosses, Rock Creek, Keya Paha county, Bellevue. (4469)

*Sarcoscypha floccosa* Schw.
On wet, dead twigs, Bellevue, Lincoln. (4543)

*Sepultaria cretea* (Cooke.) Clements.
*Lachnea cretea* Cooke.
On sandy ground, Hazel Creek Canyons, Brown county. (4548)

*Sepultaria livida* (Schum.) Clements.
*Lachnea livida* Schum.
On sandy ground, Hazel Creek canyons, Brown county. (4458)

*Sepultaria setosa* (Nees) Clements.
*Lachnea setosa* Nees.
On wood among mosses, Meadville. (4544)

*Sepultaria umbrarum* (Fr.) Clements.
*Lachnea umbrarum* Fr.
On wet ground Otowanie woods. (4556)

*Sepultaria umbrata* (Fr.) Clements.
*Lachnea umbrata* Fr.
On wet wood, canyon of the Niobrara river, Brown county. (4588)

*Helotium citrinum* (Hedw.) Fr.

On wet, decaying wood, Mead's ranch, Brown county; Rock creek, Keya Paha county. (4455) (4409)

*Helotium conformatum* Karst.

On dead wood, Long Pine. (4269)

*Helotium parile languidum* Karst.

On stems of *Helianthus*, Wabash. (4263)

*Helotium rhizogenum* Ell. & Ever.

On corticated branches of *Prunus*, Bellevue. (4259)

*Pseudohelotium hyalinum* (Pers.) Fkl.

On decorticated wood, Wabash. (4270)

*Molissia cinerea luteola* Sacc.

On decorticated branches of *Prunus*, Wabash. (4260)

ASCOBOLACEAE.

*Ascophanus aurora* (Cr.) Boud.

On cow-dung, Wabash. (4478)

*Lasiobolus equinus* (Mull.) Karst.

On horse-dung, Lincoln. (4401)

DERMATEACEAE.

*Cenangium crataegi* Schw.

On living branches of *Crataegus tomentosa*, with the pycnidial stage, *Sphaeronema longirostre* Clements, Saltillo. (4398)

*Cenangium populneum carpini* (Rehm) Clements.

*Cenangium carpini* Rehm.

On corticated wood, Lincoln. (4402)

STICTACEAE.

*Propolis faginea* (Schrad.) Karst.

On dead stumps of *Quercus macrocarpa*, Bellevue. (4267)

*Stictis mollis* Pers.

On fallen twigs, Otowanie woods; Mead's Ranch. (4418)

PATELLARIACEAE.

*Hysteropatella elliptica* (Fr.) Rehm.
On the bark of *Ulmus americana*, Lincoln. (4410)
*Hysteropatella prostii* (Desm.) Rehm.
On decorticated wood, Beatrice. (4556)

AGARICACEAE.

*Amanita muscaria* L.
On wooded bluffs of the Missouri river, Bellevue. (4230)
*Pseudofarinaceus speciosior* Batt.
On the ground, Bellevue. (4557)
*Mastocephalus cristatus* (Alb. & Schw.) OK.
In shaded places, Otowanie woods. (4058)
*Tricholoma patulum* Fr.
On the ground among dead leaves, Otowanie woods. (4559)
*Tricholoma virgatum* Fr.
In woods, Bellevue. (4237)
*Collybia dryophila* Bull.
On decaying leaves and manure, in densely shaded places, Otowanie woods. (4560)
*Collybia radicata* Relh.
In shady woods, Wabash. (4561)
*Mycena iris* Berk.
On the ground among twigs, Otowanie woods. (4562)
*Russula emetica* Fr.
In shady woods, Bellevue, Lincoln, Milford, Beatrice. (542)
*Marasmius coniatus* B. & Br.
Among dead leaves, Wabash. (4465)
*Marasmius rotula microcephalus* Sacc.
On dead trunks and leaves, Wabash. (4256)
*Volvaria bombycina* (Pers.) Fr.
On a living tree, Lincoln. (4229)
*Eccilia tristis* Bres.
Among grass in woods, Wabash. (4558)

*Pholiota gibberosa* Fr. ?

In woods, Wabash. (4255)

*Naucoria semiorbicularis* Bull.

In grass, University campus, Lincoln. (4999)

*Galera bryorum* Pers.

On mossy banks, Bellevue. (4234)

*Gomphos callisteus* (Fr.) OK.

On the ground, Bellevue. (4563)

*Stropharia merdaria* Fr.

On horse dung, Meadville, Keya Paha county. (5000)

*Stropharia stercoraria* Fr.

In manured places in woods, Bellevue. (4235)

*Gymnochilus flavo-griseus* (Berk.) Clements.

*Psathyra flavo-grisea* Berk.

Among dead leaves, Bellevue. (4236)

*Coprinus filiformis* B. & Br.

On wet straw in culture-jar, Lincoln. (4564)

*Coprinus floccosus* (DC.) Fr.

On twigs and ground in woods, Bellevue. (4232)

*Coprinus ovatus* (Schaeff.) Fr.

On wet earth, Saltillo. (4238)

*Panaeolus papilionaceus* Fr.

In manured places, Lincoln. (4228)

POLYPORACEAE.

*Boletus chrysenteron* Fr.

On the ground in shady woods, Bellevue. (5025)

*Boletus edulis* Bull.

On the ground in woods, Bellevue. (5026)

*Boletus subtomentosus* L.

In leaf-mould, Otowanie woods. (4565) Pileus olivaceous when young, brick-red, and densely silky in age; flesh becoming blue when cut.

THELEPHORACEAE.

*Peniophora flavido-alba* Cooke.
On decaying bark, Lincoln. (4408)

ALISMACEAE.

*Sagittaria longiloba* Engelm.
Minden. (4505)

LEMNACEAE.

*Wolffia brasiliensis* Weddell.
Bellevue. (4507)

GRAMINEAE.

*Poa reflexa* Vasey & Scribner.
Norfolk. (4520)
*Chamaeraphis verticillata* (L.) Porter.
Washington county. (4508) Fremont. (4523)

CYPERACEAE.

*Scirpus pauciflorus* Lightf.
Fremont. (4528)
*Fuirena squarrosa* Michx.
Fremont island, Dodge county. (4509)
*Carex granularis* Muhl.
Platte river, near Fremont. (4514)
*Carex lupulina* Muhl.
Fremont. (4510)

CRUCIFERAE.

*Cardamine bulbosa* (Schreb.) B. S. P.
Fremont. (4515)
*Thlaspi arvense* L.
Fremont. (4512)

CARYOPHYLLACEAE.

*Alsine media* L.
Fremont. (4511)

CISTACEAE.

*Lechea stricta* Legett.
Adams county. (4527)

VITACEAE.

*Vitis cinerea* Engelm.
Peru. (4530)

*Ampelopsis cordata* Michx.
Peru. (4532)

CHENOPODIACEAE.

*Chenopodium urbicum* L.
Cherry county. (4513)

AMARANTHACEAE.

*Amaranthus torreyi* (Gray) Wats.
Thomas county (4524), Hooker county (4535)

*Acnida tamariscina dehiscens* Uline and Bray.
Lincoln (4518), Wahoo (4534)

ROSACEAE.

*Rosa engelmanii* Wats.
Sowbelly Canyon, Sioux county. (4526)

PAPILIONACEAE.

*Astragalus lotiflorus nebraskensis* Bates Am. Nat. **29** : 670, 1895.
Long Pine. (4749) Clay county. (4750)

*Astragalus giganteus* (Pall.) Sheld.
North Platte. (4751)

*Psoralea collina*, Rydberg Flor. Nebr. **16** : 54, 1895.
Fort Robinson (Dr. Bessey, 1887), Scott's Bluff county. (50)

*Kuhnistera candida diffusa*, Rydberg Flor. Nebr. **16** : 59, 1895.
Deuel county. (58)

*Lathyrus ornatus flavescens*, Rydberg Flor. Nebr. **16** : 64, 1895.
Dodge, Kearney, and Cherry counties.

*Lathyrus ornatus incanus*, Smith & Rydberg, Flor. Nebr. **16** : 64, 1895.
Sheridan county (49); Fort Robinson (Dr. Bessey, 1887).

GROSSULARIACEAE.

*Ribes aureum chrysococcus*, Rydberg Flor. Nebr. **16** : 71, 1895.
Scott's Bluff, Banner, and Cherry counties. (106, 1601)

ONAGRACEAE.

*Oenothera fremontii*, Wats.
Bloomington. (4737)
*Oenothera serrulata spinulata*, Torr. & Gr.
Lancaster county. (4519) Fairbury. (4536)

ARALIACEAE.

*Panax quinquefolia* L.
Bellevue. (4522)

UMBELLIFERAE.

*Daucus carota* L.
Nebraska City. (4525)
*Eryngium yuccaefolium* Michx.
Richardson county. (4529)

LOBELIACEAE.

*Lobelia cardinalis* L.
Franklin. (4739)

CAMPANULACEAE.

*Specularia leptocarpa* Gr.
Fairbury. (4740)

PRIMULACEAE.

*Anagallis arvensis* L.
Fairbury. (4738)

ASCLEPIADACEAE.

*Ampelanus albidus* (Nutt.) Britt.
Auburn. (4533)

POLEMONIACEAE.

*Phlox kelseyi* Britt.
Sioux county. (4554)

BORAGINACEAE.

*Cynoglossum officinale* L.
Weeping Water. (4537)
*Mertensia paniculata* (Ait.) Don.
Sheridan county. (4553)

VERBENACEAE.

*Verbena stricta* x *bracteosa.*
Fremont. (4538) Kearney. (4552)
*Verbena bracteosa* x *urticifolia.*
Tecumseh. (4540)

COMPOSITAE.

*Vernonia marginata* (Torr.) Britt.
Fremont. (4551)
*Vernonia baldwinii* Torr.
Bertrand, Phelps county. (4541)
*Helianthus hirsutus trachyphyllus* Torr. & Gr.
Bellevue. (4550)
*Hymenopappus flavescens* Gray.
Fairbury. (4542)
*Hieracium umbellatum* L.
Squaw canyon, Sioux county. (4549)

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## SUMMARY.

| | | |
|---|---|---|
| Previously reported | | 2820 |
| In this report: | | |
| New species | 55 | |
| Other additions | 323 | |
| Total | 378 | |
| Less new hosts only | 2 | |
| | 376 | 376 |
| Total | | 3196 |